

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD****CENTRAL VALLEY REGION**

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**ORDER NO. R5-2008-0114**  
**NPDES NO. CA0082805**

**WASTE DISCHARGE REQUIREMENTS**  
**FOR**  
**CALIFORNIA DAIRIES, INC.**  
**TIPTON MILK PROCESSING FACILITY**  
**TIPTON, TULARE COUNTY**

The following Discharger is subject to waste discharge requirements as set forth in this Order:

**Table 1. Discharger Information**

<b>Discharger</b>	California Dairies, Inc.
<b>Name of Facility</b>	Tipton Milk Processing Facility
<b>Facility Address</b>	11894 Avenue 120
	Tipton, California 93272-0837
	Tulare County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a <b>minor</b> discharge.	

The discharge by California Dairies, Inc. (CDI), from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

**Table 2. Discharge Locations**

<b>Discharge Point</b>	<b>Effluent Description</b>	<b>Discharge Point Latitude</b>	<b>Discharge Point Longitude</b>	<b>Receiving Water</b>
001	Treated Wastewater	36° 00' 45" N	119° 18' 30" W	Morrison Ditch, Casa Blanca Canal, Tule River
002	Treated Wastewater	36° 00' 45" N	119° 18' 30" W	Groundwater

**Table 3. Administrative Information**

This Order was adopted by the Regional Water Quality Control Board on:	<b>31 July 2008</b>
This Order shall become effective on:	<b>31 July 2008</b>
This Order shall expire on:	<b>31 July 2013</b>
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	<b>31 February 2013</b>

IT IS HEREBY ORDERED, that Orders No. 94-295 and No. 92-057 are rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the CWC (commencing with Section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **31 July 2008**.

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PAMELA C. CREEDON, Executive Officer

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## I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order:

**Table 4. Facility Information**

<b>Discharger</b>	California Dairies, Inc.
<b>Name of Facility</b>	Tipton Milk Processing Facility
<b>Facility Address</b>	11894 Avenue 120
	Tipton, California 93272-0837
	Tulare County
<b>Facility Contact, Title, and Phone</b>	Ronald Thompson, Vice President – Regulatory and Quality Assurance, California Dairies, Inc., (559) 625-2200 ext. 110
<b>Mailing Address</b>	2000 North Plaza Drive, Visalia, California 93291
<b>Type of Facility</b>	Dry, Condensed, and Evaporated Dairy Products
<b>Facility Design Flow</b>	1.3 million gallons per day (mgd)

## II. FINDINGS

The California Regional Water Quality Control Board, Central Valley Region (hereinafter Regional Water Board), finds:

**A. Background.** California Dairies, Inc. (CDI), operates a milk processing facility (Facility) in Tipton, Tulare County. CDI manufactures milk powder, butter, cream, skim milk, condensed skim milk, condensed whole milk, ultra-filtered whole milk concentrate, and ultra-filtered skim milk concentrate. Treated wastewater is discharged to unlined percolation ponds and then routed for discharge to Morrison Ditch. Morrison Ditch connects to the Casa Blanca Canal; both are operated by the Lower Tule River Irrigation District (LTRID). The LTRID distribution system is hydraulically connected to the Tule River (a water of the United States, U.S.). The discharge is currently regulated by Waste Discharge Requirements Order (Order) No. 94-925 National Pollutant Discharge Elimination System (NPDES) Permit No. CA0082805 adopted by the Regional Water Board on 28 October 1994 and administratively extended by Regional Water Board staff on 5 August 1999. In May 2001, CDI submitted an engineering report pertaining to renewal of the Order/NPDES Permit and reported that the Facility had been expanded. The milk processing capacity was increased to seven (7) million pounds per day and the wastewater treatment facility (WWTF) was modified to accommodate flows greater than authorized by Order No. 94-295. CDI submitted a Report of Waste Discharge (RWD) in November 2006 and reported that the Facility was further expanded to accommodate a milk processing capacity of 10 million pounds per day.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policies are held to be equivalent to references to the Discharger herein.

- B. Facility Description.** CDI reports that the wastewater consists of two waste streams. The first has historically been called “non-process” wastewater and consists of water evaporated and condensed from the fluid milk evaporation process (cow water) and clear water (boiler blow down, cooling tower blow down, vacuum pump seal water, water chases, final flushes, and other waste streams that reportedly do not contain organic contaminants). Brine generated from the Facility’s two water softeners is included with the boiler blow down waste stream. The second has historically been called “process” wastewater and includes clean-in-place (CIP) system wash water, milk product spillage, and lost product as a result of cleaning. The CIP process includes the use of detergents, disinfectants, and other chemicals. The Facility is in Section 5, T29S, R28E, MDB&M, as shown in Attachment B (Site Location Map), a part of this Order. The wastewater treatment system currently includes one mechanical vapor recompression (MVR) evaporation unit, four aerated lagoons (Ponds A, B, 1A, and 1B), and three unlined storage/stabilization ponds (Ponds 2, 3, and 4). Attachment C provides a flow schematic of the treatment process at the Facility.
- C. Legal Authorities.** This Order is issued pursuant to Section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC, commencing with Section 13370). It shall serve as a NPDES permit for point source discharges from this Facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4, Division 7 of the CWC (commencing with Section 13260).
- D. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E are also incorporated into this Order.
- E. California Environmental Quality Act (CEQA).** Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.
- F. Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at Title 40 of the Code of Federal Regulations (40 CFR) 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Effluent Limitations Guidelines and Standards for the Dairy Products Processing Point Source Category in 40 CFR 405 and Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

**G. Water Quality-based Effluent Limitations.** Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. 40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) EPA criteria guidance under CWA Section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 22.44(d)(1)(vi).

**H. Water Quality Control Plans.** The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition -Revised 2004*, (hereinafter Tulare Lake Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Tulare Lake Basin Plan does not specifically identify beneficial uses for Morrison Ditch or Casa Blanca Canal. For the Tule River (below Lake Success), the Basin Plan designates the following beneficial uses: municipal and domestic supply (MUN); agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), water contact recreation (REC-1), non-contact water recreation (REC-2), warm freshwater habitat (WARM), wildlife habitat (WILD), and groundwater recharge (GWR). The discharge occurs in the Tule Basin Hydrologic Unit (Detailed Analysis Unit 243). The designated beneficial uses of groundwater in DAU 243 are MUN, AGR, IND, PRO, and WILD. The Basin Plan incorporates State Water Board Resolution No. 88-63. As such, the quality of water in Morrison Ditch and Casa Blanca Canal should be considered suitable or potentially suitable for municipal or domestic supply. Also, the canal waters are waters of the U.S. and the quality of water in the canals must be maintained to meet the federal Clean Water Act threshold of "swimmable and fishable" and the CTR states that application of aquatic life criteria/objectives are based on the presence in all waters of some aquatic life designation. Thus, applicable water quality criteria/objectives for waters in Morrison Ditch and Casa Blanca Canal should be consistent with the beneficial uses of MUN by rule, AGR and GWR by design, and REC-1 and WARM by rebuttable presumption. Thus, the beneficial uses applicable to the receiving waters are as follows:

**Table 5. Basin Plan Beneficial Uses**

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Morrison Ditch, Casa Blanca Canal	MUN, AGR, GWR, REC-1, WARM.
002	Groundwater	MUN, AGR, IND, PRO, WILD.

- I. National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain water quality criteria for priority pollutants.
- J. State Implementation Policy.** On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005 that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
- K. Compliance Schedules and Interim Requirements.** In general, an NPDES permit must include final effluent limitations that are consistent with CWA Section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board has concluded that where the Basin Plan allows for schedules of compliance and the Regional Water Board is newly interpreting a narrative standard, it may include schedules of compliance in the permit to meet effluent limits that implement a narrative standard. See *In the Matter of Waste Discharge Requirements for Avon Refinery* (State Board Order WQ 2001-06 at pp. 53-55). See also *Communities for a Better Environment (CBE) et al. v. State Water Resources Control Board*, 34 Cal.Rptr.3d 396, 410 (2005). The Basin Plan includes a provision that authorizes the use of compliance schedules in NPDES permits provided that the schedule does not allow more than 10 years (from the adoption date of the objective or criteria) for compliance (see Basin Plan page IV-22). Consistent with the State Water Board's Order in the CBE matter, the Regional Water Board has the discretion to include compliance schedules in NPDES permits when it is including an effluent limitation that is a "new interpretation" of a narrative water quality objective. This conclusion is also consistent with the USEPA policies and administrative decisions. See, e.g., *Whole Effluent Toxicity (WET) Control Policy*. The Regional Water Board, however, is not required to include a schedule of compliance, but may issue a Time Schedule Order pursuant to CWC Section 13300 or a Cease and Desist Order pursuant to CWC Section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Regional Water Board will consider the merits of each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Basin Plan, should consider feasibility of achieving compliance, and must impose a schedule that is as short as practicable to achieve compliance with the objectives, criteria, or effluent limit based on the objective or criteria.

For CTR constituents, Section 2.1 of the SIP provides that, based on a Discharger's request and demonstration that it is infeasible for an existing Discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under Section 5.3 of the SIP, a compliance schedule may not exceed five years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or 18 May 2010) to establish and comply with CTR criterion-based effluent limitations. When a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective.

- L. Alaska Rule.** On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes [40 CFR 131.21; 65 Fed. Reg. 24641 (27 April 2000)]. Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after 30 May 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000 may be used for CWA purposes, whether or not approved by USEPA.
- M. Stringency of Requirements for Individual Pollutants.** This Order contains technology-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD<sub>5</sub>, TSS, and pH. This Order's technology-based pollutant restrictions implement the minimum federal technology-based requirements of the CWA for this Facility.
- N. Antidegradation Policy.** 40 CFR 131.12 requires that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 is consistent with the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.
- O. Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. The discharge specifications and effluent limitations authorized in this Order are at least as stringent as those in Order No. 94-295. As discussed in detail in the Fact Sheet, this Order is consistent with the anti-backsliding requirements of the CWA and federal regulations.

**P. Monitoring and Reporting.** 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC Sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and State requirements. This MRP is provided in Attachment E.

**Q. Standard and Special Provisions.** Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. Rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.

**R. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections IV.B, V.B., and portions of VI.C of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

**S. Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

**T. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet of this Order.

### **III. DISCHARGE PROHIBITIONS**

- A.** Discharge of waste other than treated process wastewater at the location and in the manner described in the Findings and authorized herein is prohibited.
- B.** The bypass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G and I.H (Attachment D).
- C.** Neither the discharge nor its treatment shall create a nuisance or pollution as defined in Section 13050 of the CWC.
- D.** Discharge of waste classified as 'hazardous', as defined in Section 2521(a) of Title 23, California Code of Regulations (CCR), Section 2510 et seq., or of waste classifiable as 'designated', as defined in CWC Section 13173, is prohibited.



## IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

### A. Effluent Limitations

#### 1. Final Effluent Limitations – Discharge 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge 001, with compliance measured at Monitoring Location EFF-001(except as noted below) as described in the attached MRP (Attachment E):

a. Limitations in Table 6, as set forth below:

**Table 6. Effluent Limitations – Discharge 001**

Parameter	Units	Daily Maximum	Monthly Average
BOD <sub>5</sub>	mg/L	80	40
	lb/day	800	400
TSS <sup>3</sup>	mg/L	80	40
	lb/day	1004	499
Settleable Solids	ml/L	0.5	0.1
Chloride	mg/L	175	--
Boron, Total Recoverable	mg/L	1.0	--
Zinc, Total Recoverable <sup>1</sup>	ug/L	32	16
Ammonia <sup>2</sup>	mg/L	2.2	0.9

<sup>1</sup>. Effective 18 May 2010, as required by Provision VI. C.7.a.i.

<sup>2</sup>. Effective 31 July 2013, as required by Provision VI. C.7.b.iii.

<sup>3</sup>. Compliance shall be determined at Monitoring Location DS-002.

b. **Flow.** The maximum daily discharge from Discharge Point 001 shall not exceed 4.32 million gallons. The calendar monthly discharge shall not exceed a total of 40 million gallons.

c. **pH.** Effluent shall not exhibit a pH of less than 6.5 or greater than 8.3 standard units.

d. **Electrical Conductivity.** Effluent annual average EC shall not exceed the annual flow-weighted average of EC in the source water plus 500 µmhos/cm, or a total of 1,000 µmhos/cm, whichever is more stringent. (For compliance determination, see Section VII.C.)

e. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:

- i. 23 MPN/ 100 mL as a 7-sample median; and .
- ii. 240 MPN/ 100 ml at any time.

- f. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
  - i. 70% for any one bioassay; and
  - ii. 90% for the median of any three consecutive bioassays.

## 2. Interim Effluent Limitations – Discharge 001

The interim effluent limitations in Table 7 shall apply in lieu of the final effluent limitations specified for the same parameters in Table 6 until the effective date of the final effluent limitations, as specified in footnotes 1 and 2, Table 6:

**Table 7. Interim Effluent Limitations – Discharge 001**

Parameter	Units	Daily Maximum
Zinc, Total Recoverable	ug/L	404
Ammonia	mg/L	45

## B. Land Discharge Specifications- Discharge 002

The Discharger shall maintain compliance with the following effluent limitations at Discharge 002, with compliance measured at Monitoring Location DS-002, as described in the attached MRP (Attachment E):

1. Limitations in Table 8, as set forth below:

**Table 8. Discharge Specifications – Discharge 002**

Parameter	Units	Annual Average
Chloride	mg/L	175
Boron, Total Recoverable	mg/L	1.0

2. **Flow.** The maximum daily discharge flow from Discharge Point 002 shall not exceed 3.1 mgd. The average monthly discharge flow shall not exceed 1.3 mgd.
3. **pH.** Effluent shall not exhibit a pH of less than 6.0 or greater than 9.0 standard units.
4. **Electrical Conductivity.** Effluent annual average EC shall not exceed the annual flow-weighted average of EC in the source water plus 500 µmhos/cm, or a total of 1,000 µmhos/cm, whichever is more stringent. (For compliance determination, see Section VII.C.)

**C. Reclamation Specifications – Not applicable.**

**V. RECEIVING WATER LIMITATIONS**

**A. Surface Water Limitations**

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. Discharge 001 shall not cause the following conditions in Morrison Ditch or Casa Blanca Canal:

1. **Un-ionized Ammonia.** Un-ionized ammonia to be present in amounts that adversely affect beneficial uses or to be present in excess of 0.025 mg/L (as N).
2. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than ten percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.
3. **Biostimulatory Substances.** Biostimulatory substances to be present that promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
4. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
5. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
6. **Dissolved Oxygen:**
  - a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass at centroid of flow;
  - b. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
  - c. The dissolved oxygen concentration to be reduced below 5.0 mg/L at any time.
7. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
8. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
9. **pH.** The pH to be depressed below 6.5, raised above 8.3, or changed by more than 0.3 units.

10. **Sediment.** The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
11. **Settleable Material.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
12. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.
13. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or to domestic or municipal water supplies.
14. **Temperature.** The natural temperature to be increased by more than 5°F.
15. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
16. **Turbidity.** The turbidity to increase as follows:
  - a. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs.
  - b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
  - c. More than 10 NTU where natural turbidity is between 50 and 100 NTUs.
  - d. More than 10 percent where natural turbidity is greater than 100 NTUs.

## **B. Interim Groundwater Limitations**

Release of waste constituents from the Facility shall not cause or contribute to groundwater:

1. Containing concentrations of constituents identified below, or natural background quality, whichever is greater:
  - a. Nitrate as nitrogen of 10 mg/L.
  - b. Electrical conductivity of 900 umhos/cm.
  - c. Total Coliform Organisms of 2.2 MPN/100 mL.
  - d. For constituents identified in Title 22, the MCLs quantified therein.
2. Containing taste or odor-producing constituents, toxic substances, or any other constituents, in concentrations that cause nuisance or adversely affect beneficial uses.

## VI. PROVISIONS

### A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
2. The Discharger shall comply with the following provisions:
  - a. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
    - i. violation of any term or condition contained in this Order;
    - ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;
    - iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
    - iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

- *New regulations.* New regulations have been promulgated under Section 405(d) of the Clean Water Act, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.
- *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.
- *Change in sludge use or disposal practice.* Under 40 CFR 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Regional Water Board may review and revise this Order at any time upon application of any affected person or the Regional Water Board's own motion.

- b. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Regional Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

- c. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
  - i. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or
  - ii. controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

- d. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.
- e. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.
- f. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.
- g. A copy of this Order shall be maintained at the discharge Facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.
- h. Safeguard to electric power failure:
  - i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.
  - ii. Upon written request by the Regional Water Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past five years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The

- iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Regional Water Board not approve the existing safeguards, the Discharger shall, within ninety days of having been advised in writing by the Regional Water Board that the existing safeguards are inadequate, provide to the Regional Water Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Regional Water Board, become a condition of this Order.
- i. The Discharger, upon written request of the Regional Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under Regional Water Board Standard Provision VI.A.2.h.

The technical report shall:

- i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.
- ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.
- iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Regional Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

- j. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, Sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, Sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in

a manner such that all work can be clearly attributed to the professional responsible for the work.

- k. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board and USEPA.
- l. The Discharger shall conduct analysis on any sample provided by USEPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to USEPA's DMQA manager.
- m. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.
- n. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.
- o. The Discharger shall file with the Regional Water Board technical reports on self-monitoring performed according to the detailed specifications contained in the MRP attached to this Order.
- p. The results of all monitoring required by this Order shall be reported to the Regional Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order.
- q. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, Sections 13385, 13386, and 13387.
- r. Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (CWC Section 1211)
- s. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, 1-hour average effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Regional Water Board by telephone (559) 445-5116 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Regional Water Board waives confirmation. The written notification shall include the information required by Attachment D, Section V.E.1 [40 CFR 122.41(l)(6)(i)].

## **B. Monitoring and Reporting Program (MRP) Requirements**



The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

## C. Special Provisions

### 1. Reopener Provisions

- a. This Order requires the Discharger to conduct monthly monitoring of the effluent for total recoverable zinc and periodic monitoring for all priority pollutants. This Order may be reopened for modification, or revocation and reissuance, depending on the results of this required monitoring.
- b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.
- c. This Order may be reopened for modification to allow reclamation if new reclamation opportunities are identified.
- d. This Order may be reopened as a result of conditions that necessitate a major modification of a permit as described in 40 CFR 122.62, including:
  - i. If new or amended applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.
  - ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- e. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric chronic toxicity effluent limitations, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on the new provisions.
- f. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

## 2. Special Studies, Technical Reports, and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity.** The Discharger shall conduct chronic whole effluent toxicity testing, as specified in the MRP (Attachment E, Section V.). Furthermore, the Discharger shall investigate the causes of, and identify corrective actions to, reduce or eliminate effluent toxicity. If the discharge exceeds the toxicity numeric monitoring trigger established in this Provision, the Discharger shall initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent reoccurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity.
  - i. **Initial Investigative Toxicity Reduction Evaluation (TRE) Work Plan.** By 31 January 2008, the Discharger shall submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer. This should be a one to two page document including, at minimum:
    - a) A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of effluent toxicity, effluent variability, and treatment system efficiency;
    - b) A description of the Facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the Facility; and
    - c) A discussion of who will conduct the Toxicity Identification Evaluation, if necessary (i.e. an in-house expert or outside contractor).
  - ii. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. WET testing results exceeding the monitoring trigger during accelerated monitoring demonstrate a pattern of toxicity and require the Discharger to initiate a TRE to address the effluent toxicity.
  - iii. **Numeric Monitoring Trigger.** The numeric toxicity monitoring trigger is  $> 1 \text{ TUc}$  (where  $\text{TUc} = 100/\text{NOEC}$  (no observed effect concentration)). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.

- iv. **Accelerated Monitoring Specifications.** If the monitoring trigger is exceeded during regular chronic toxicity testing, within 14-days of notification by the laboratory of the test results, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four (4) chronic toxicity tests every two weeks using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:
- a) If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.
  - b) If the source(s) of the toxicity is easily identified (i.e. temporary plant upset), the Discharger shall make necessary corrections to the Facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.
  - c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and initiate a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of the test results exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:
    - 1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including TRE WET monitoring schedule;
    - 2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
    - 3) A schedule for these actions.
- b. **Waste Management and Disposal Management Plan.** The Discharger shall prepare and submit by **30 April 2009**, a characterization of waste streams generated by the MVR, RO and UF processes. The characterization must include the volume produced, physical characteristics and final disposition of each waste stream, along with a quality analyses which includes at a minimum: pH, BOD5, EC, total dissolved solids, non-volatile dissolved solids, nitrogen series, and standard minerals including: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, sulfate, total alkalinity (including alkalinity series), all major cations and anions, and hardness, and include verification that the analysis is complete (i.e., cation/anion balance). The quality analyses for each waste stream must be based on a statistically significant number of samples and must be representative of each waste stream.

- c. **Reclamation Feasibility Study.** The Discharger shall prepare and submit by **30 April 2009**, the results of a comprehensive study to determine if reclamation is feasible. If reclamation is determined to be feasible, the study needs to include a schedule for implementing and maximizing reclamation in a manner to ensure appropriate application of wastewater considering the current crops grown in the reclamation areas, nutrient availability in the soils, and nutrient contributions from the wastewater and other amendments.
- d. **Final Groundwater Limitations Studies.** The Discharger shall submit a technical report in the form of a work plan and proposed schedule to complete studies to compile sufficient technical data to determine applicable numerical groundwater quality objectives and to derive appropriate groundwater limitations for the area affected, and potentially affected, by the WWTF discharge. Studies must be designed to:
- a. Determine the spatial extent of groundwater affected by, and that could be affected by, the discharge.
  - b. Determine the types of crops that are, and could potentially be, grown, and any other potential beneficial uses of groundwater, that could be affected by the discharge.
  - c. Determine salinity source control measures that can be implemented to reduce the salinity of the WWTF discharge and the salinity of water percolating to groundwater.
  - d. Evaluate and propose, with supporting documentation, appropriate numeric groundwater quality objectives for groundwater that could be affected by the WWTF discharge.

Study results must be compiled into a final technical report. The final technical report shall propose specific numeric groundwater limitations for each waste constituent that comply with the most stringent applicable water quality objectives for that waste constituent. The most stringent applicable water quality objective shall be interpreted based on the Regional Board policy entitled "Application of Water Quality Objectives" on pages IV-21 through IV-23 of the Basin Plan. The Discharger shall comply with the following compliance schedule in implementing the work required by this Provision:

<u>Task</u>	<u>Compliance Date</u>
Submit technical report: work plan and schedule	<b>31 October 2008</b>
Commence studies	<b>30 days</b> following Executive Officer approval of Task a
Complete studies	As established by Task a or 2 years following Task b, whichever is sooner

<u>Task</u>	<u>Compliance Date</u>
Submit technical report summarizing results of studies and proposing appropriate numeric groundwater limitations.	<b>60 days</b> following completion of Task c, or three years following Order adoption, whichever is sooner
Include in its annual report (described in the MRP) a description of the overall status of the studies.	Annually on <b>1 February</b> following completion of Task d

- e. **Wastewater Management Practices.** The Discharger shall prepare and submit by **31 January 2009**, a technical report describing practices used, or intended to be used, to manage its wastewater to ensure compliance with the requirements of the Basin Plan. If the Discharger intends to dilute its wastewater with LTRID water or well water, it must describe how it will monitor these practices, including the quantity and quality of the water used for dilution, the source of the water used for dilution, and the anticipated timing of dilution.
- f. **Total Coliform Organism Study.** The Discharger may prepare and submit in the form of a technical report for Executive Officer consideration, the results of a study to determine whether Effluent Limitations IV.A.1.e. for total coliform are necessary to protect public health and to ensure compliance with the Basin Plan water quality objective for bacteria. If the study demonstrates that the limitations are unnecessary to meet these requirements, the Discharger may submit a request for the Regional Water Board to reconsider the limitation. Any such request must provide the technical information necessary to demonstrate the removal of the limitation complies with federal antibacksliding requirements and state and federal antidegradation requirements.

### 3. Best Management Practices and Pollution Prevention

#### a. Pollution Prevention Plan for Zinc.

The Discharger shall prepare and implement a pollution prevention plan for zinc in accordance with CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet, Attachment F, VI.B.3.a. A work plan and time schedule for preparation of the pollution prevention plan shall be completed and submitted **31 January 2008**, for approval by the Executive Officer. The Pollution Prevention Plan shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

#### **b. Pollutant Minimization Program**

The Discharger shall develop and conduct a Pollutant Minimization Program (PMP) as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either a sample result is reported as DNQ and the effluent limitation is less than the RL; or a sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

- i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;
- ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;
- iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
- iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
- v. An annual status report that shall be sent to the Regional Water Board including:
  - (a) All PMP monitoring results for the previous year;
  - (b) A list of potential sources of the reportable priority pollutant(s);
  - (c) A summary of all actions undertaken pursuant to the control strategy; and
  - (d) A description of actions to be taken in the following year.

#### **4. Construction, Operation and Maintenance Specifications**

##### **a. Disposal Pond Requirements.**

- i. Ponds shall be managed to prevent breeding of mosquitoes. In particular,

- a) An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
- b) Weeds shall be minimized.
- c) Dead algae, vegetation, and debris shall not accumulate on the water surface.
- ii. Ponds shall have sufficient capacity to contain all wastewater volume generated annually that cannot be reliably and consistently disposed of by evaporation and percolation from the ponds, or discharged at Discharge Point D-001. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
- iii. Prior to the onset of the rainy season of each year, available pond storage capacity shall at least equal the design volume necessary to comply with the previous paragraph.
- iv. The Discharger shall maintain and operate all ponds sufficient to protect the integrity of containment levees and prevent overtopping or overflows. Unless a California civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically). As a means of managing available capacity and to discern compliance with this paragraph, the Discharger shall install and maintain in each pond permanent markers with calibration that indicates the water level at design capacity and enables determination of available operational freeboard.
- b. Treatment ponds must be lined in a manner that ensures compliance with groundwater limitations and is reflective of BPTC.
- c. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and pond disposal areas, or at the outfall to the Morrison Ditch.
- d. Dissolved oxygen in the upper zone (1 foot) of effluent in disposal ponds of less than 1.0 mg/L will be considered an indication that the ponds are organically overloaded and threatening to violate Discharge Prohibition III.C. Should the DO be below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Regional Water Board within 7 days with a proposal that will insure a consistent DO of at least 1.0 mg/L within 30 days.
- e. The Facility shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

- f. Physical facilities shall be designed and constructed according to accepted engineering practice and shall be capable of full and consistent compliance with this Order when properly operated and maintained. Proper operation and maintenance shall be described in an Operation and Maintenance ("O&M") manual prepared by the design engineer. The operation and maintenance manual shall be reviewed at least every time a significant change, alteration, or expansion is made to the Facility. The Discharger shall certify in every annual report whether the operation and maintenance manual is complete and reflective of the Facility, and whether operation, maintenance, and staffing for the year being reported was as prescribed in the O&M manual. A copy of the O&M manual shall be submitted **31 January 2008**.

## **5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable**

## **6. Other Special Provisions**

- a. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Regional Water Board (Attachment D, Section II.C.).
- b. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Water Board and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment D, Section V.B.) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.
- c. The Discharger shall for each fiscal year (July-June) pay the required annual filing fee in accordance with the current fee schedule established by the State Water Board by the due date specified in the annual invoice (typically issued during October of each fiscal year). The fee is for privilege of discharge authorized by this Order.

## **7. Compliance Schedules**

### **a. Compliance Schedules for Final Effluent Limitations for Zinc**

- i. **By 18 May 2010**, the Discharger shall comply with the final effluent limitations for zinc as required by Effluent Limitation IV.A.1.a.



- ii. **Treatment Feasibility Study.** The Discharger shall perform an engineering treatment feasibility study examining the feasibility, costs and benefits of different treatment options that may be required to remove zinc from the discharge. A work plan and time schedule for preparation of the treatment feasibility study shall be completed and submitted to the Regional Water Board **within 6 months of the effective date of this Order** and will be subject to the approval of the Executive Officer. The treatment feasibility study shall be completed and submitted to the Regional Water Board **within one (1) year following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).
- b. **Compliance Schedule for Final Effluent Limitations for Ammonia.** The Discharger shall comply with the final effluent limitations for ammonia as required by Effluent Limitation IV.A.1.a. The Discharger shall comply in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
i. Submit technical report in the form of a work plan and implementation schedule for complying with Effluent Limitation IV.A.1.a.	<b>31 January 2009</b>
ii. Implement EO approved work plan.	<b>60 days</b> following Executive Officer approval of Task a.
iii.. Full Compliance.	By no later than <b>31 July 2013</b> .

Progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.) until the Discharger achieves compliance with Provision VII.A.1.

## VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV of this Order will be determined as specified below:

- A. **BOD and TSS Effluent Limitations.** Compliance with the final effluent limitations for BOD and TSS required in Section IV.A. shall be ascertained by grab samples.
- B. **Total Coliform Organisms Effluent Limitations (Section IV.A.1.e.).** For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-sample median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last seven samples for which analyses have been completed. If the 7-sample median of total coliform organisms exceeds a most probable number (MPN) of 23 per 100 milliliters, the

Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period.

**C. Effluent Annual Average Electrical Conductivity (Section IVA.1.d. and IV.B.4.).**

Compliance with the limit will be determined monthly by comparing the annual rolling average of the weekly data submitted for effluent EC and the annual rolling average of the monthly flow-weighted data submitted for the source water EC.

## ATTACHMENT A – DEFINITIONS

**Arithmetic Mean (u)**, also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean =  $u = \Sigma x / n$       where:  $\Sigma x$  is the sum of the measured ambient water concentrations, and  $n$  is the number of samples.

**Average Monthly Effluent Limitation (AMEL)**: the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

**Average Weekly Effluent Limitation (AWEL)**: the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

**Best Practicable Treatment or Control (BPTC)**: BPTC is a requirement of State Water Resources Control Board Resolution 68-16 – “Statement of Policy with Respect to Maintaining High Quality of Waters in California” (referred to as the “Antidegradation Policy”). BPTC is the treatment or control of a discharge necessary to assure that, “(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.” Pollution is defined in CWC Section 13050(I). In general, an exceedance of a water quality objective in the Basin Plan constitutes “pollution”.

**Bioaccumulative** pollutants are those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

**Carcinogenic** pollutants are substances that are known to cause cancer in living organisms.

**Coefficient of Variation (CV)** is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

**Daily Discharge**: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the

arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

**Detected, but Not Quantified (DNQ)** are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

**Dilution Credit** is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

**Effluent Concentration Allowance (ECA)** is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

**Estimated Chemical Concentration** is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

**Inland Surface Waters** are all surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

**Instantaneous Maximum Effluent Limitation:** the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

**Instantaneous Minimum Effluent Limitation:** the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

**Maximum Daily Effluent Limitation (MDEL)** means the highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

**Median** is the middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements ( $n$ ) is odd, then the median =  $X_{(n+1)/2}$ . If  $n$  is even, then the median =  $(X_{n/2} + X_{(n/2)+1})/2$  (i.e., the midpoint between the  $n/2$  and  $n/2+1$ ).

**Method Detection Limit (MDL)** is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR 136, Attachment B, revised as of July 3, 1999.

**Minimum Level (ML)** is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

**Mixing Zone** is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

**Not Detected (ND)** are those sample results less than the laboratory's MDL.

**Persistent** pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

**Pollutant Minimization Program (PMP)** means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to CWC Section 13263.3(d), shall be considered to fulfill the PMP requirements.

**Pollution Prevention** means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in CWC Section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

**Reporting Level (RL)** is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with Section 2.4.2 of the SIP or established in accordance with Section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied

to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

**Source of Drinking Water** is any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

**Standard Deviation ( $\sigma$ )** is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - u)^2]/(n - 1))^{0.5}$$

where:

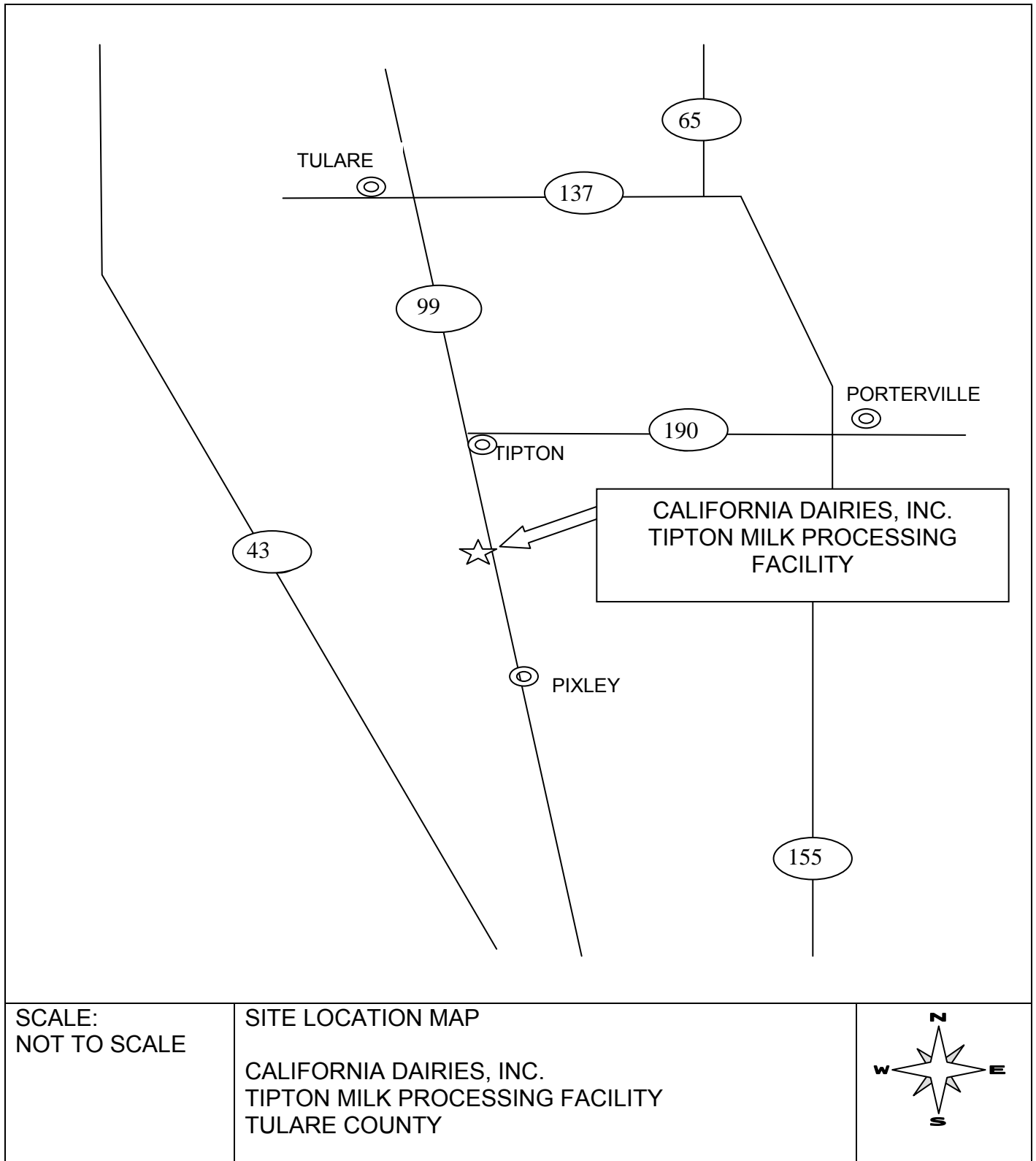
x is the observed value;

u is the arithmetic mean of the observed values; and

n is the number of samples.

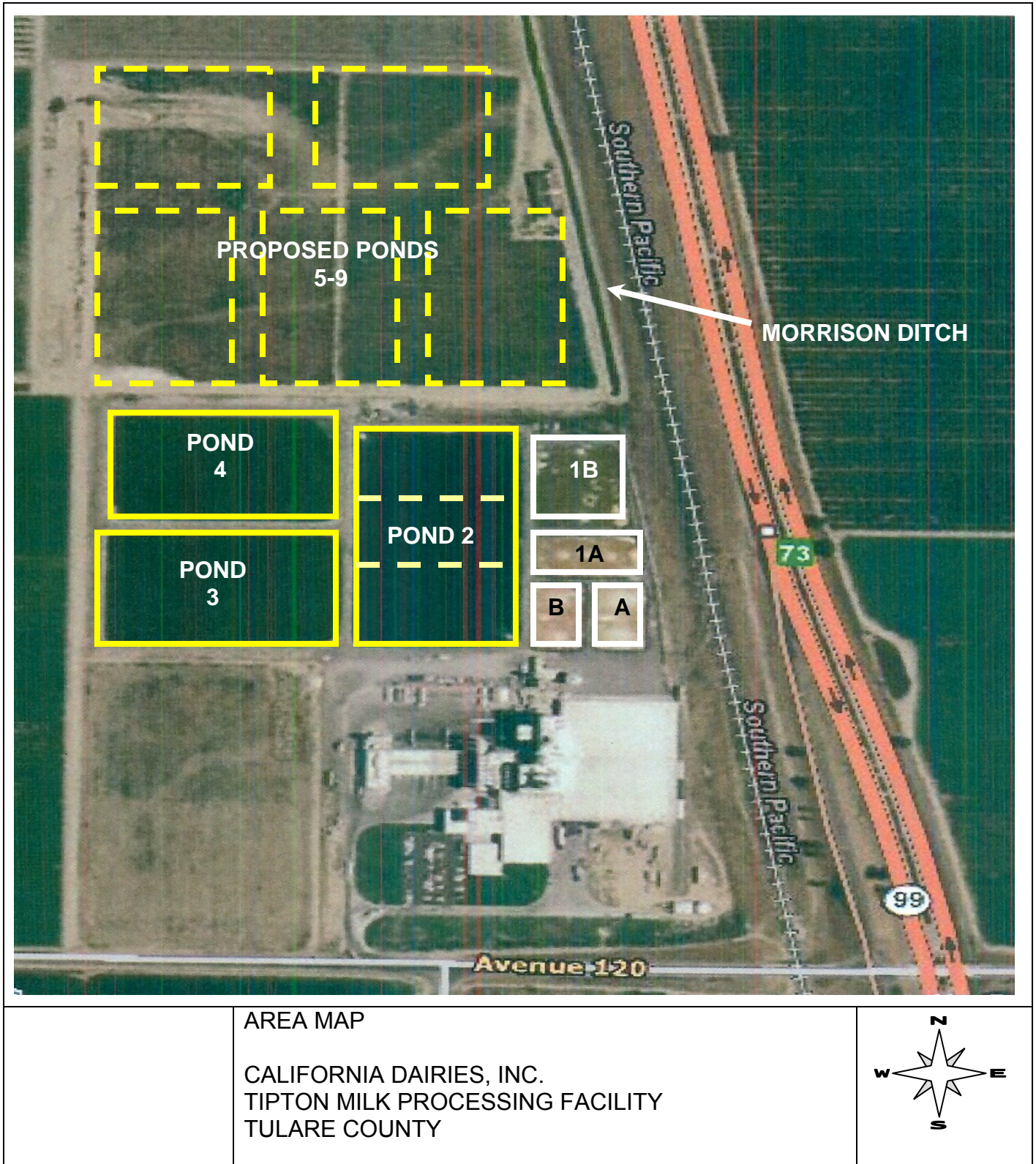
**Toxicity Reduction Evaluation (TRE)** is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

## ATTACHMENT B – MAPS



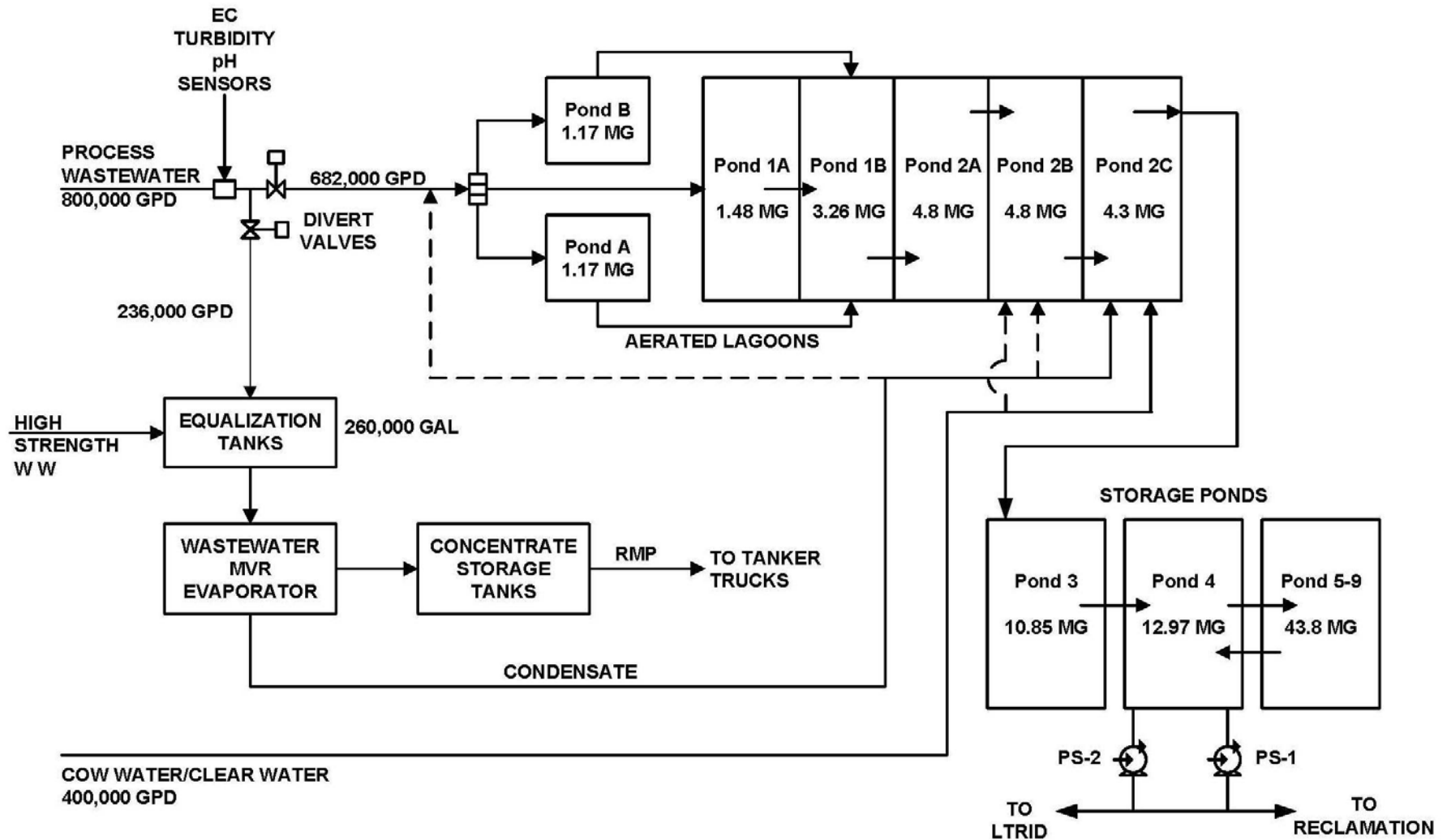


## ATTACHMENT B – MAPS





## ATTACHMENT C – FLOW SCHEMATIC



## **ATTACHMENT D –STANDARD PROVISIONS**

### **I. STANDARD PROVISIONS – PERMIT COMPLIANCE**

#### **A. Duty to Comply**

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the CWC and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR 122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR 122.41(a)(1).)

#### **B. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 CFR 122.41(c).)

#### **C. Duty to Mitigate**

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR 122.41(d).)

#### **D. Proper Operation and Maintenance**

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 CFR 122.41(e).)

#### **E. Property Rights**

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR 122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations (40 CFR 122.5(c).).

## **F. Inspection and Entry**

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR 122.41(i); CWC 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR 122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR 122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR 122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location. (40 CFR 122.41(i)(4).)

## **G. Bypass**

1. Definitions
  - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR 122.41(m)(1)(i).)
  - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR 122.41(m)(4)(i)):
  - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR 122.41(m)(4)(i)(A));
  - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR 122.41(m)(4)(i)(B)); and
  - c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR 122.41(m)(4)(i)(C).)
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 CFR 122.41(m)(4)(ii).)
5. Notice
  - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR 122.41(m)(3)(i).)
  - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 CFR 122.41(m)(3)(ii).)

## **H. Upset**

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 CFR 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was

caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR 122.41(n)(3)):
  - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR 122.41(n)(3)(i));
  - b. The permitted facility was, at the time, being properly operated (40 CFR 122.41(n)(3)(ii));
  - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR 122.41(n)(3)(iii)); and
  - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR 122.41(n)(4).)

## **II. STANDARD PROVISIONS – PERMIT ACTION**

### **A. General**

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 CFR 122.41(f).)

### **B. Duty to Reapply**

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 CFR 122.41(b).)

### **C. Transfers**

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the CWC. (40 CFR 122.41(l)(3); 122.61.)

### **III. STANDARD PROVISIONS – MONITORING**

- A.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR 122.41(j)(1).)
- B.** Monitoring results must be conducted according to test procedures under 40 CFR 136 or, in the case of sludge use or disposal, approved under 40 CFR 136 unless otherwise specified in 40 CFR 503 unless other test procedures have been specified in this Order. (40 CFR 122.41(j)(4); 122.44(i)(1)(iv).)

### **IV. STANDARD PROVISIONS – RECORDS**

- A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 CFR 122.41(j)(2).)

**B. Records of monitoring information shall include:**

- 1. The date, exact place, and time of sampling or measurements (40 CFR 122.41(j)(3)(i));
- 2. The individual(s) who performed the sampling or measurements (40 CFR 122.41(j)(3)(ii));
- 3. The date(s) analyses were performed (40 CFR 122.41(j)(3)(iii));
- 4. The individual(s) who performed the analyses (40 CFR 122.41(j)(3)(iv));
- 5. The analytical techniques or methods used (40 CFR 122.41(j)(3)(v)); and
- 6. The results of such analyses. (40 CFR 122.41(j)(3)(vi).)

**C. Claims of confidentiality for the following information will be denied (40 CFR 122.7(b)):**

- 1. The name and address of any permit applicant or Discharger (40 CFR 122.7(b)(1)); and
- 2. Permit applications and attachments, permits and effluent data. (40 CFR 122.7(b)(2).)

## **V. STANDARD PROVISIONS – REPORTING**

### **A. Duty to Provide Information**

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 CFR 122.41(h); CWC 13267.)

### **B. Signatory and Certification Requirements**

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 CFR 122.41(k).)
2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 CFR 122.22(a)(1).)
3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR 122.22(b)(1));
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility

- for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR 122.22(b)(2)); and
- c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 CFR 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR 122.22(c).)
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 CFR 122.22(d).)

### **C. Monitoring Reports**

1. Monitoring results shall be reported at the intervals specified in the MRP (Attachment E) in this Order. (40 CFR 122.22(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR 136 or, in the case of sludge use or disposal, approved under 40 CFR 136 unless otherwise specified in 40 CFR 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 CFR 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR 122.41(l)(4)(iii).)



## **D. Compliance Schedules**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 CFR 122.41(l)(5).)

## **E. Twenty-Four Hour Reporting**

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR 122.41(l)(6)(ii)):
  - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(A).)
  - b. Any upset that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(B).)
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR 122.41(l)(6)(iii).)

## **F. Planned Changes**

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 CFR 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in Section 122.29(b) (40 CFR 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 CFR 122.41(l)(1)(ii).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii).)

#### **G. Anticipated Noncompliance**

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 CFR 122.41(l)(2).)

#### **H. Other Noncompliance**

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 CFR 122.41(l)(7).)

#### **I. Other Information**

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR 122.41(l)(8).)

### **VI. STANDARD PROVISIONS – ENFORCEMENT**

- A. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, Sections 13385, 13386, and 13387.

### **VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS**

#### **A. Non-Municipal Facilities**

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 CFR 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 CFR 122.42(a)(1)):
  - a. 100 micrograms per liter (ug/L) (40 CFR 122.42(a)(1)(i));

- b. 200 ug/L for acrolein and acrylonitrile; 500 ug/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 CFR 122.42(a)(1)(ii));
  - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR 122.42(a)(1)(iii)); or
  - d. The level established by the Regional Water Board in accordance with 40 CFR 122.44(f). (40 CFR 122.42(a)(1)(iv).)
2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 CFR 122.42(a)(2)):
- a. 500 micrograms per liter (ug/L) (40 CFR 122.42(a)(2)(i));
  - b. 1 milligram per liter (mg/L) for antimony (40 CFR 122.42(a)(2)(ii));
  - c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR 122.42(a)(2)(iii)); or
  - d. The level established by the Regional Water Board in accordance with 40 CFR 122.44(f). (40 CFR 122.42(a)(2)(iv).)

## ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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## **ATTACHMENT E – MONITORING AND REPORTING PROGRAM**

40 CFR 122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This monitoring and reporting program (MRP) establishes monitoring and reporting requirements, which implement the federal and state regulations.

### **I. GENERAL MONITORING PROVISIONS**

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Water Board.
- B.** Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State of California Department of Public Health (formerly Department of Health Services). In the event a certified laboratory is not available to the Discharger, analyses performed by a non-certified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board. Laboratories that perform sample analyses shall be identified in all monitoring reports.
- C.** Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
- D.** Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this MRP.

### **II. MONITORING LOCATIONS**

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

**Table E-1. Monitoring Station Locations**

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	EFF-001	At the outfall to Morrison Ditch
002	DS-002	After all treatment units, prior to discharge to unlined ponds.
--	PND	Opposite inlet to each unlined storage pond
--	SPL-001	Water Supply Wells
--	RSW-001	Casa Blanca Canal, 500 feet upstream from the junction of Morrison Ditch and Casa Blanca Canal
--	RSW-002	Casa Blanca Canal, 500 feet downstream from the junction of Morrison Ditch and Casa Blanca Canal.
--	G-001 – G-003	Groundwater monitoring wells

### III. INFLUENT MONITORING REQUIREMENTS – Not Applicable

### IV. EFFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor the discharge of treated wastewater from unlined ponds to Morrison Ditch, EFF-001, as identified in Table E-2.

**Table E-2. Effluent Monitoring – EFF-001**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	mgd	Meter	Continuous	
BOD <sub>5</sub>	mg/L	Grab	1/week	1
	lb/day	Calculated	1/week	
Settleable Solids	ml/L	Grab	1/month	1
pH	standard	Grab	1/week	1
Temperature	°C	Grab	1/month	
Total Coliform Organisms	MPN/100 ml	Grab	4/year	1
Electrical Conductivity @ 25°C	umhos/cm	Grab	1/week	1
Chloride	mg/L	Grab	4/year	1
Boron, Total Recoverable	mg/L	Grab	4/year	1
Zinc	ug/L	Grab	1/month	1
Ammonia	mg/L	Grab	1/month	1,4
Standard Minerals <sup>2</sup>	mg/L	Grab	4/year	1
Priority Pollutants	varies	Grab	1/year <sup>3</sup>	1
Acute Toxicity	--	Grab	1/year <sup>3</sup>	1
Chronic Toxicity	--	Grab	1/year <sup>3</sup>	1

<sup>1</sup> Pollutants shall be analyzed using the analytical methods described in 40 CFR 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Board or the State Board.

<sup>2</sup> Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), hardness, and all major cations and anions, and include verification that the analysis is complete (i.e., cation/anion balance).

<sup>3</sup> Concurrent with receiving surface water sampling. Priority pollutants are defined as USEPA Priority Pollutants and consist of the constituents listed in the most recent National Toxics Rule and California Toxics Rule. The Discharger must analyze pH and hardness of the effluent and receiving water at the same time as priority pollutants.

<sup>4</sup> Concurrent with receiving surface water ammonia sampling. Report as total ammonia nitrogen; record pH and temperature at time of collection.

## V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

**A. Acute Toxicity Testing.** The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. Monitoring Frequency – the Discharger shall perform acute toxicity testing once per year, concurrent with effluent monitoring and sampling.
2. Sample Types – For static non-renewal and static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location EFF-001.
3. Test Species – Test species shall be fathead minnows (*Pimephales promelas*).
4. Methods – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.
5. Test Failure – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed seven days following notification of test failure.

**B. Chronic Toxicity Testing.** The Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:

1. Monitoring Frequency – the Discharger shall perform three species chronic toxicity testing once per year, concurrent with effluent monitoring and sampling.
2. Sample Types – Effluent samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location specified in the MRP. The receiving water control shall be a grab sample obtained from the RSW-001 sampling location, as identified in the MRP. In the absence of receiving water lab water may be used as a control.

3. Sample Volumes – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
4. Test Species – Chronic toxicity testing measures sublethal (e.g. reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:
  - The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
  - The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
  - The green alga, *Selenastrum capricornutum* (growth test).
5. Methods – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002.
6. Reference Toxicant – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.
7. Dilutions – The chronic toxicity testing shall be performed using 100% effluent and two controls. If toxicity is found in any effluent test, the Discharger must immediately retest using the dilution series identified in Table E-4, below. The receiving water control shall be used as the diluent (unless the receiving water is toxic). If the receiving water is toxic, laboratory control water may be used as the diluent, in which case, the receiving water should still be sampled and tested to provide evidence of its toxicity.
8. Test Failure – The Discharger must re-sample and re-test as soon as possible, but no later than 14 days after receiving notification of a test failure. A test failure is defined as follows:
  - a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or
  - b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. (A retest is only required in this case if the test results do not exceed the monitoring trigger specified in Special Provisions VI.C.2.a.iii of this Order).



**Table E-3. Chronic Toxicity Testing Dilution Series**

Sample	Dilutions (%)					Controls	
	100	75	50	25	12.5	Receiving Water	Laboratory Water
% Effluent	100	75	50	25	12.5	0	0
% Receiving Water	0	25	50	75	87.5	100	0
% Laboratory Water	0	0	0	0	0	0	100

**C. WET Testing Notification Requirements.** The Discharger shall notify the Regional Water Board within 24-hrs after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.

**D. WET Testing Reporting Requirements.** All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Regional Water Board within 30 days following completion of the test, and shall contain, at minimum:
  - a. The results expressed in TUC, measured as 100/NOEC (no observed effect concentration), and also measured as 100/LC<sub>50</sub>, 100/EC<sub>25</sub>, 100/IC<sub>25</sub>, and 100/IC<sub>50</sub>, as appropriate;
  - b. The statistical methods used to calculate endpoints;
  - c. The statistical output page, which includes the calculation of the PMSD;
  - d. The dates of sample collection and initiation of each toxicity test; and
  - e. The results compared to the numeric toxicity monitoring trigger.

Additionally, the monthly discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUC, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency [i.e., either quarterly, monthly, accelerated, or Toxicity Reduction Evaluations (TRE)]. (Note: items a through c, above, are only required when testing is performed using the full dilution series.)

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.
3. **TRE Reporting.** Reports for TRE shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes (If applicable):
  - a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC (lowest observed effect concentration), type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
  - b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.
  - c. Any information on deviations or problems encountered and how they were dealt with.

## VI. Land Discharge Specification and Monitoring Requirements

### A. Monitoring Location DS-002

The Discharger shall monitor the discharge of treated process and non-process wastewater to unlined ponds at DS-002, as identified in Table E-4.

**Table E-4. Monitoring Location – DS-002**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	mgd	Computed	Daily	
pH	standard	Grab	1/week	<sup>1</sup>
TSS	mg/L	Grab	1/week	<sup>1</sup>
	lb/day	Calculated	1/week	
Electrical Conductivity @ 25°C	umhos/cm	Grab	1/week	<sup>1</sup>
Chloride	mg/L	Grab	1/month <sup>2</sup>	<sup>1</sup>
Boron, Total Recoverable	mg/L	Grab	1/month <sup>2</sup>	<sup>1</sup>

<sup>1</sup> Pollutants shall be analyzed using the analytical methods described in 40 CFR 136.

<sup>2</sup> Monitoring frequency may be reduced to 4/year after one year based on a demonstration by CDI and with written concurrence of the Executive Officer that sample results are consistent and more frequent monitoring is unnecessary.

### B. Monitoring Location PND

The Discharger shall inspect the conditions of all unlined storage ponds once per week and write visual observations of potential problems in a bound logbook. Notations shall include observations of whether weeds are developing in the water or the pond surface, and their locations; whether dead algae, vegetation, scum, or debris are accumulating on the pond surface, and their location; whether borrowing animals or insects are present; and the color of the pond. A copy of the entries made in the log each month shall be submitted with the monitoring report the following month. Where the operation and maintenance (O&M) manual requires remedial action, the Discharger shall briefly explain the action to be taken to correct the discrepancy.

Pond monitoring shall include the following:

**Table E-5. Pond Monitoring – PND**

Parameter	Units	Sample Type	Frequency
Freeboard	feet <sup>1</sup>	Observation	1/Week
Dissolved Oxygen	mg/L	Grab <sup>2</sup>	1/Week <sup>3</sup>

<sup>1</sup> To the nearest tenth of a foot.

<sup>2</sup> Samples shall be collected from a depth of one-foot, opposite the inlet, between 0800 and 0900 hours.

<sup>3</sup> Should sampling indicate DO < 1.0 mg/L or ponds produce objectionable odors, the monitoring frequency for the subject pond shall be increased to daily until DO ≥ 1.0 mg/L, and/or odor-producing conditions are resolved.

## VII. Reclamation Monitoring Requirements – Not Applicable

## VIII. Receiving Water Monitoring Requirements

### A. Surface Water Monitoring RSW-001 and RSW-002

- The Discharger shall monitor the receiving water at RSW-001 and RSW-002, as identified in Table E-6. Monitoring at RSW-001 and RSW-002 is not required unless discharge is occurring at Discharge 001.

**Table E-6. Receiving Water Monitoring – RSW-001 and RSW-002**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	cfs or mgd	Estimate	Daily	
Electrical Conductivity @ 25°C	umhos/cm	Grab	1/week	1
pH	standard	Grab	1/week	1
Standard Minerals <sup>2,3</sup>	mg/L	Grab	1/year	1
Ammonia	mg/L	Grab	1/month	1,4
Temperature	°C	Grab	1/month	
Priority Pollutants <sup>3,5</sup>	varies	Grab	1/year	

<sup>1</sup> Samples shall be analyzed using the methods and procedures described in the 40 CFR 136.

<sup>2</sup> Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), hardness, and all major cations and anions, and include verification that the analysis is complete (i.e., cation/anion balance).

<sup>3</sup> Sample to be taken from upstream receiving water only, during LTRID irrigation flow.

<sup>4</sup> Sample concurrently with effluent ammonia monitoring (Table E-2). Record pH and temperature at time of sampling. The Discharger may request a reduction in monitoring frequency after a sufficient number of samples have been collected to provide a statistically valid characterization of the receiving water quality.

<sup>5</sup> Concurrent with effluent priority pollutant sampling. Priority pollutants are defined as USEPA Priority Pollutants and consist of the constituents listed in the most recent National Toxics Rule and California Toxics Rule. The Discharger must analyze pH and hardness of the effluent and receiving water at the same time as priority pollutants.

2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-001 and RSW-002. Notes on receiving water conditions shall be summarized in the monitoring reports. Attention shall be given to the presence of:

- |                                 |  |
|---------------------------------|--|
| a. Floating or suspended matter | e. Visible films, sheens, or coatings      |
| b. Discoloration                | f. Fungi, slimes, or objectionable growths |
| c. Bottom Deposits              | g. Potential nuisance conditions           |
| d. Aquatic Life                 |  |

## B. Groundwater Monitoring

Concurrently with groundwater quality sampling, the Discharger shall measure the water level in each well as groundwater depth (in feet and hundredths) and as groundwater surface elevation (in feet and hundreds above mean sea level). The horizontal geodetic location of each monitoring well shall be provided where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum.

Prior to collecting samples and after measuring the water level, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

The Discharger shall include in its submittal of groundwater elevation data, a contour map based on said data showing the gradient and direction of groundwater flow under/around the facility and effluent disposal area(s). The groundwater contour map shall also include the location of the monitoring wells and active storage and land disposal areas (i.e., areas receiving treated effluent).

The Discharger shall monitor groundwater for the constituents and frequencies at G001-G003 as follows:

**Table E-7. Groundwater Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Depth to groundwater	Feet <sup>2</sup>	Measure	2/year	
Groundwater elevation	Feet <sup>2</sup>	Calculated	2/year	
pH	Standard Units	Grab	2/year	1
Nitrate Nitrogen, Total (as N)	mg/L	Grab	2/year	1
Electrical Conductivity @ 25°C (EC)	µmhos/cm	Grab	2/year	1
Total Dissolved Solids	mg/L	Grab	2/year	1

Ammonia	mg/L	Grab	1/year	1
Total Organic Carbon	mg/L	Grab	1/year	1
Minerals <sup>3</sup>	mg/L	Grab	1/year	1

<sup>1</sup> Pollutants shall be analyzed using the analytical methods described in 40 CFR 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Board or the State Board.

<sup>2</sup> To the nearest hundredth, above mean sea level.

<sup>3</sup> Minerals shall include at least arsenic, chloride, sulfate, bicarbonate alkalinity, carbonate alkalinity, calcium, hardness, magnesium, potassium, sodium, boron, iron, phosphate, manganese, and all major anions and cations. Analyses should be accompanied by an anion/cation balance demonstrating that analyses are complete.

## IX. Other Monitoring Requirements

### A. Supply Water Monitoring Location SPL-001

The Discharger shall monitor the source of supply water for the Facility at monitoring location SPL-001 as identified in Table E-5. If the source water is from more than one well, the monitoring requirements apply to each additional well/source.

**Table E-8. Supply Water Monitoring – SPL-001**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Electrical Conductivity @ 25°C <sup>1</sup>	umhos/cm	Grab	1/month	1
Standard Minerals <sup>2</sup>	mg/L	Grab	1/year	1

<sup>1</sup> As the source water is from more than one well, the EC results shall be reported as a weighted average and include copies of supporting calculations.

<sup>2</sup> Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), hardness, and all major cations and anions, and include verification that the analysis is complete (i.e., cation/anion balance).

### B. Dilution Monitoring

The Discharger shall monitor the source, the quality, and the quantity of any water that is blended with wastewater at any point in the wastewater treatment and disposal system, prior to discharge to surface waters or to the storage ponds as identified in Table E-9:

**Table E-9. Dilution Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	mgd	Meter or calculated	Daily	
Electrical Conductivity @ 25°C <sup>1</sup>	umhos/cm	Grab	1/month	1
Standard Minerals <sup>2</sup>	mg/L	Grab	1/year	1

<sup>1</sup> If the water is from more than one source, the EC results shall be reported as a weighted average and include copies of supporting calculations.

<sup>2</sup> Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), hardness, and all major cations and anions, and include verification that the analysis is complete (i.e., cation/anion balance).

## **X. REPORTING REQUIREMENTS**

### **A. General Monitoring and Reporting Requirements**

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Upon written request of the Regional Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).
3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Regional Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the compliance time schedule.
4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy ( $\pm$  a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
  - d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.
5. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
- a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
  - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

## **B. Self Monitoring Reports (SMRs)**

- 1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.
- 2. Monitoring results shall be submitted to the Regional Water Board by the first day of the second month following sample collection. Annual monitoring results shall be submitted by the first day of the second month following each calendar year.
- 3. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, etc., shall be determined and recorded as needed to demonstrate compliance.

4. Flow shall be reported as the total volume discharged per day for each day of discharge.
5. Electrical conductivity for effluent monitoring and for supply water monitoring shall be reported monthly as a calculated rolling annual average beginning **31 July 2009**. Supporting calculations shall be included with monitoring results.
6. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.
7. A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or Facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions.
8. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

Regional Water Quality Control Board  
Central Valley Region – Fresno Branch Office  
1685 E Street  
Fresno, California 93706

9. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

**Table E-10. Monitoring Periods and Reporting Schedule**

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly SMR
Daily	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
Weekly	Permit effective date	Sunday through Saturday	Submit with monthly SMR
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1 <sup>st</sup> day of calendar month through last day of calendar month	First day of second month following each calendar month



Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Annually	Permit effective date	January 1 through December 31	By 1 March following the monitoring period

### C. Discharge Monitoring Reports (DMRs) – Not Applicable

### D. Other Reports

1. **Progress Reports.** As specified in the compliance time schedules required in Special Provisions VI., progress reports shall be submitted in accordance with the following reporting requirements. At minimum, the progress reports shall include a discussion of the status of final compliance, whether the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date.

**Table E-11. Reporting Requirements for Special Provisions Progress Reports**

Special Provision	Reporting Requirements
Compliance Schedules for Final Effluent Limitations for ammonia, compliance with final effluent limitations. (Provision VI.B.7.)	<b>1 June</b> , annually, until final compliance
Compliance Schedules for Final Effluent Limitations for zinc, Pollution Prevention Plan (Provision VI.B.7.)	<b>1 June</b> , annually, after approval of work plan until final compliance

2. **By 31 January 2009**, the Discharger shall submit a report outlining minimum levels, method detection limits, and analytical methods for approval, with a goal to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for CTR constituents as outlined in Section 2.3 and 2.4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, adopted 2 March 2000 by the State Water Resources Control Board. All peaks identified by analytical methods shall be reported.
3. **Annual Operations Report.** By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:
  - a. The names and general responsibilities of all persons employed at the Facility.
  - b. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations.
  - c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

- d. A statement certifying whether the current operations and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
- e. The Discharger may also be requested to submit an annual report to the Regional Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

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## ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Sections or subsections of this Order identified as “not applicable” have been determined to not apply to this Discharger.

### I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

**Table F-1. Facility Information**

<b>WDID</b>	5D541067001
<b>Discharger</b>	California Dairies, Inc.
<b>Name of Facility</b>	Tipton Milk Processing Facility
<b>Facility Address</b>	11894 Avenue 120
	Tipton, California 93272-0837
	Tulare County
<b>Facility Contact, Title and Phone</b>	Ronald Thompson, Vice President – Regulatory and Quality Assurance, California Dairies, Inc., (559) 625-2200 ext. 110
<b>Authorized Person to Sign and Submit Reports</b>	Ronald Thompson, Vice President – Regulatory and Quality Assurance, California Dairies, Inc., (559) 625-2200 ext. 110
<b>Mailing Address</b>	2000 North Plaza Drive, Visalia, California 93291
<b>Billing Address</b>	Same
<b>Type of Facility</b>	Industry Group 202: Dairy Products
	SIC Code 2023: Dry, Condensed, and Evaporated Dairy Products
<b>Major or Minor Facility</b>	Minor
<b>Threat to Water Quality</b>	2
<b>Complexity</b>	B
<b>Pretreatment Program</b>	Not Applicable
<b>Reclamation Requirements</b>	Not Applicable
<b>Facility Permitted Flow</b>	1.3 million gallons per day (mgd)
<b>Facility Design Flow</b>	1.3 mgd
<b>Watershed</b>	Tulare Lake Hydrologic Basin, South Valley Floor Hydrologic Unit, Tule Delta Hydrologic Area (558.20)
<b>Receiving Water</b>	Groundwater, Morrison Ditch/Casa Blanca Canal (Tule River)
<b>Receiving Water Type</b>	Groundwater, Inland Surface Water

- A.** California Dairies, Inc. (CDI) operates a milk processing facility (Facility) in Tipton, Tulare County. CDI manufactures milk powder, butter, cream, skim milk, condensed skim milk, condensed whole milk, ultra-filtered whole milk concentrate, and ultra-filtered skim milk concentrate. Treated high-strength wastewater is commingled with lower strength wastewaters and discharged to unlined ponds and then routed for discharge to Morrison Ditch. Morrison Ditch connects to the Casa Blanca Canal; both are operated

by the Lower Tule River Irrigation District (LTRID). The LTRID distribution system is a tributary to the Tule River (a water of the United States, U.S.). CDI is hereafter referred to as the Discharger.

- B.** The discharge is currently regulated by Waste Discharge Requirements Order (Order) No. 94-925 [National Pollutant Discharge Elimination System (NPDES) Permit No. CA0082805], adopted by the California Regional Water Quality Control Board, Central Valley Region (Regional Water Board) on 28 October 1994 and administratively extended by Regional Water Board staff on 5 August 1999.
- C.** In May 2001, CDI submitted an engineering report for renewal of the Order/NPDES Permit and reported that the Facility had been expanded. The milk processing capacity was increased to seven (7) million pounds per day and the wastewater treatment facility (WWTF) was modified to accommodate flows greater than authorized by Order No. 94-295. CDI submitted a Report of Waste Discharge (RWD) in November 2006 and reported that the Facility was further expanded to accommodate a milk processing capacity of 10 million pounds per day.

## **II. FACILITY DESCRIPTION**

The CDI Facility encompasses approximately 80 acres about three miles south of Tipton, Tulare County, in Section 18, T22S, R25E, MDB&M, as shown in Attachment B (Site Location Map), a part of this Order. CDI is a milk marketing cooperative formed in 1999, which combined and merged California Milk Producers, Danish Creamery Association, and San Joaquin Valley Dairyman. The Facility opened in 1994 with a fluid milk processing capacity of three (3) million pounds per day. Since 1994, CDI completed several expansions and increased the overall processing capacity to 10 million pounds per day. CDI reports that an average of 8.7 million pounds per day of raw milk is received and processed at the Facility. The raw milk is processed into skim milk, cream, condensed milk products, and ultra-filtered milk fluid products. The skim milk is further processed to a variety of dry powdered milk products and condensed milk, and butter is manufactured from a majority of the cream. The Facility operates 24 hours per day, 365 days per year, and employs about 118 people. According to the CDI website ([www.californiadairies.com](http://www.californiadairies.com)), the Tipton plant is one of the largest milk processing facilities in the nation.

The Facility receives fluid whole milk from CDI member dairies located primarily in Tulare, Kings, and Fresno Counties. Received milk is transferred to one of ten 60,000-gallon stainless steel storage silos. Milk is then processed through one of five 80,000-pound per hour separators that fractionate the milk into cream and skim milk. Cream is then pasteurized, stored in silos, then either shipped out as cream or churned into butter. Butter is packaged in bulk containers and put in cold storage prior to shipment. Ammonia chillers refrigerate the cold storage area. Skim milk and other fluid milk are evaporated in one of three evaporators/concentrators to produce condensed milk products. Evaporated water is cooled and condensed forming "cow" water or condensate, which is then stored and reused. Condensed skim milk is heat dried in one of two driers to produce powdered milk. Powdered milk is packaged onsite in bulk bags or totes and warehoused prior to offsite

shipment. For 2007 production data reported by CDI, the following summarizes the average mass and composition of the source materials.

	<b>Pounds/Day</b>	<b>Fat</b>	<b>Protein</b>	<b>Carbohydrate</b>
<b>Raw Milk to Skim, Cream, and Ultrafiltration</b>	8,700,000	3.62%	3.26%	4.94%
<b>Cream to Butter</b>	438,188	43.40%	1.78%	2.64%
<b>Skim Milk to Condensed</b>	51,306	0.20%	12.70%	19.20%
<b>Skim Milk to Dryer</b>	834,348	0.25%	18.50%	28.00%

The Facility uses a clean-in-place (CIP) process for cleaning tanker trucks, silos, tanks, pumps, piping, and process equipment. The CIP process is a programmed series of rinses, caustic and acid washes, and disinfection to meet sanitary requirements of food processing. CDI reports that CIP caustic washes were recently converted from sodium hydroxide to potassium hydroxide and a caustic recovery system was installed to reduce chemical needs and reduce wastewater electrical conductivity (EC).

A co-generation power plant (operated by a separate entity) provides power and steam for the Facility. Ancillary equipment includes five boilers which provide steam heat for pasteurization, thermal vapor recompression evaporators, pre-heating for evaporation and CIP processes. Boilers are fed with the condensate from the evaporation process, that is softened and de-aerated. The water softener is a zeolite ion exchange resin that is regenerated with brine about once per month.

The Facility was constructed with three sewer systems. One is utilized for facility floor drains and what is called process wastewater (hereafter “high-strength wastewater”) in Order No. 94-295 and includes CIP wash water, milk product spillage, and lost product as a result of cleaning. A second system is designed to drain and collect what is referred to as “non-process” wastewater (hereafter called “low-strength wastewater”) in Order No. 94-295 and includes the water evaporated and condensed from the fluid milk evaporation process (cow water) and clear water (boiler blow down, cooling tower blow down, vacuum pump seal water, water chases, final flushes, and other waste streams that do not contain organic contaminants). Brine generated from the Facility’s two water softeners is included with the boiler blow down waste stream. The third system is the domestic waste collection system which discharges to an onsite septic system.

40 CFR 122.2 defines process wastewater as:

*...any waste which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.*

Using this definition, components of the low-strength wastewater stream are defined as process wastewater by federal regulation and must be regulated as such. This Order,

therefore, does not distinguish between the high-strength and low-strength wastewater streams and references to process wastewater refer to both wastewater streams.

#### **A. Site Conditions**

1. The Facility is on the floor of the San Joaquin Valley in southern Tulare County at an elevation of approximately 270 to 275 feet above sea level.
2. Land use proximal to the Facility is primarily agricultural. Union Pacific railroad tracks and State Highway 99 are east of the Facility, beyond which are agricultural properties. Avenue 120 is south of the Facility and agricultural fields are north and west of the Facility. The southern extent of Morrison Ditch is adjacent east of the northeast portion of the Facility.
3. Average annual precipitation and evaporation for the area are approximately 8.1 inches and in excess of 78 inches, respectively. The Facility is not within the 100-year floodplain.
4. According to the U.S. Department of Agriculture, Natural Resource Conservation Service, Web Soil Survey for Tulare County (Western Part, December 2007), the soils in the area of the Facility are identified as Tagus loam. Tagus loam is characterized as having slopes from zero to two percent and contains alluvium derived from granitic rock sources. Tagus loam is well drained with moderately-high to high capacity to transmit water (about 1.2 to 4.0 feet per day).
5. A soils investigation was conducted at the Facility in 1991 prior to construction of the existing wastewater ponds. Eight soil borings were advanced to depths from 30 to 60 feet bgs. The encountered soils primarily consisted of silty clays, sandy silts, and clayey sands. Several samples were tested for permeability; the results ranged from 0.003 to 5.4 feet per day.
6. The LTRID website ([www.ltrid.org](http://www.ltrid.org)) includes groundwater data maps prepared for LTRID and other nearby water districts, prepared by Provost and Pritchard. According to the maps entitled *Depth to Water in Wells, Spring 2007* and *Elevation of Water in Wells, Spring 2007*, groundwater beneath the Facility is about 130 to 140 feet below ground surface and the groundwater flows southwesterly.
7. Two onsite wells provide supply water for the Facility. The wells are reported to be about 600 feet deep with perforations from about 370 to 590 feet below ground surface. Between January 2005 and September 2007, the EC of the source water averaged 218 umhos/cm and water use averaged about 8.5 million gallons per month. The following summarizes water quality data for the wells as reported by the California Department of Public Health. The data set represents samples collected and analyzed between March 2002 and October 2006.



Average of Available Data					
Well	EC (umhos/cm)	TDS (mg/L)	Nitrate (mg/L)	Chloride (mg/L)	Sodium (mg/L)
Source Water Wells (combined)	194	134	5.5	7	43

8. CDI installed three groundwater monitoring wells (MW-1, MW-2, and MW-3) in April and May 2006 to evaluate the underlying groundwater conditions. The wells were installed just southeast, southwest, and west of the existing treatment and storage ponds, respectively. The case file includes results of five sampling events completed between May 2006 and July 2007. The groundwater was measured at depths ranging from about 140 to 157 feet and reported groundwater elevation data suggests the underlying groundwater gradient varies but predominantly flows south-southwest. Groundwater samples from each well were analyzed for dissolved metals and inorganic constituents such as alkalinity, electrical conductivity, nitrate, ammonia nitrogen, TDS, and sulfate. For the identified constituents, the following summarizes the available data for the sampling events completed between May 2006 and July 2007.

Average of Available Data					
Well	EC (umhos/cm)	Manganese (mg/L)	Nitrate (mg/L)	Chloride (mg/L)	Sodium (mg/L)
MW-1	318	<0.01	16	12	32
MW-2	834	<0.01	6	34	86
MW-3	846	0.09	4	56	96

## B. Description of Wastewater Treatment or Controls

Order No. 94-295 describes the WWTF to generally include mechanical vapor recompression (MVR), two aerated lagoons, a stabilization pond (Pond 1), and three unlined storage ponds (Ponds 2, 3, and 4). Order No. 94-295 authorized discharge of wastewater to the storage ponds at flow rates of 0.12 mgd for high-strength wastewater and 0.33 mgd for low-strength wastewater. Since the adoption of Order No. 94-295, the Discharger expanded the milk processing capacity of the Facility from 3 million pounds of milk per day to 10 millions pounds of milk per day and expanded the WWTF to accommodate increases of wastewater flows. The WWTF currently includes one MVR unit, four aerated lagoons (Ponds A, B, 1A, and 1B), and three unlined storage/stabilization ponds (Ponds 2, 3, and 4). Since expanding the Facility the process wastewater flow volume increased and now averages 1.09 mgd, based on data reported for January 2007 to September 2007. CDI is proposing to further implement

improvements to the WWTF (discussed further in Section II.F, Planned Changes) and requests authorization to increase the monthly average process wastewater discharge to 1.3 mgd and increase the maximum daily discharge to 3.1 mgd.

The November 2006 RWD prepared by CDI includes an analysis of the wastewater streams. A summary of the data provided by CDI is presented in the following table.

		Various samples collected in 2000, 2001, and 2006	
Wastewater Stream	Constituent (units)	Minimum	Maximum
Cow Water	EC (umhos/cm)	<10	6,524
	BOD (mg/L)	ND	60
Boiler/cooling tower blow down	EC (umhos/cm)	16	7,290
	BOD (mg/L)	ND	10
Clear water composite	BOD (mg/L)	<5	520
	TKN (mg/L)	2.5	43.6
		One sample collected May 2000	
High-strength process wastewater	EC (umhos/cm)	2,220	
	BOD (mg/L)	2,500	
	TDS (mg/L)	3,610	
	Total nitrogen (mg/L)	211	

About 200,000 gallons per day of the low-strength wastewater is used in the Facility as boiler feed water and about 100,000 gallons per day is used for wash down and CIP processes. During the summer months about 100,000 gallons per day is used for landscape irrigation. The balance of the low-strength wastewater bypasses the aerated lagoons and is routed directly to the storage ponds. CDI estimates that a maximum of 400,000 gallons per day of low-strength wastewater would flow to the storage ponds. If needed, low-strength wastewater can also be diverted to the treatment ponds (aerated lagoons).

High-strength wastewater is routed to a pump station and from there is diverted either to the MVR or aerated lagoons by inline sensors that measure EC, pH, and opacity. As of June 2008 and according to CDI staff, high-strength wastewater with EC less than 1,000 umhos/cm, pH less than 10.0, and opacity below 25% is diverted to the aerated lagoons (Ponds A and B). High-strength wastewater with EC greater than 1,000 umhos/cm is diverted to the 200,000-gallon tank. If the 200,000-gallon tank is full, excess high-strength wastewater is not treated by the MVR and is routed to Ponds A and B for treatment. An average of 650,000 gallons per day of high-strength wastewater is routed by the sensors to the lined aerated lagoons for conventional

treatment prior to discharge to the storage ponds. All high-strength wastewater flow is measured by a meter at the discharge of the high-strength wastewater pump station.

The MVR evaporator has the capacity to process 0.12 mgd of process wastewater. Based on data reported for January 2007 to September 2007, monthly wastewater flows to the MVR averaged 0.11 mgd. Recovered condensate from the MVR is routed to the storage ponds. Recovered milk product generated from the MVR process (average of about 7,000 gallons per day) is temporarily stored in two 6,500-gallon tanks and later hauled offsite to Sierra Cattle Company and/or the East Bay Municipal Utility District. This waste stream has not been characterized.

High-strength wastewater flow that bypasses the MVR is divided to flow equally (parallel flow) to Ponds A and B for conventional aeration treatment, then through Pond 1A and 1B in series before discharge to Pond 2. Ponds A and B are constructed with 60 mil geomembrane liners and each is equipped with two 50-hp vertical shaft surface aerators, two 7.5-hp brush aerators, and one 10-hp brush aerator. The aerators are designed to provide complete mixing for BOD removal. Each pond has a capacity of 1.17 million gallons and provides approximately two days detention time. Ponds 1A and 1B are also constructed with 60 mil geomembrane liners. Pond 1A is equipped with three 10-hp vertical shaft surface aerators and one 15-hp brush aerator, and has a capacity of 1.48 million gallons. Pond 1B is equipped with two 7.5-hp brush aerators and has a capacity of 3.26 million gallons. These ponds are designed as partial mix facultative ponds for wastewater stabilization and settlement of solids.

Ponds 2, 3, and 4 are unlined and used for storage and percolation. These ponds are about 12 to 14 feet deep and have a total storage capacity of about 128.5 acre-feet with two feet of freeboard. Pond 2 is equipped with a 10-hp brush aerator. Total pond capacity for the WWTF (Ponds A, B, 1A, 1B, 2, 3, and 4) is 48.95 million gallons.

The ponds are managed to minimize weed control, minimize accumulation of plant material and debris on the surface, and to prevent breeding of mosquitoes. According to representatives of CDI, Ponds 2, 3, and 4 have not been emptied (for pond bottom maintenance/clearing) in the last five to six years.

### **C. Discharge Points and Receiving Waters**

1. Order No. 94-295 authorizes discharge of treated process and non-process wastewaters to unlined storage ponds, to Morrison Ditch (identified as Discharge Point 001), and to an adjacent 220-acre reclamation area (identified as Discharge Point 002) owned by Mr. Charles Pitigliano.
2. CDI proposes to continue to discharge treated wastewater to unlined ponds for evaporation and percolation, and to Morrison Ditch.
3. For discharge to the reclamation area, Mr. Pitigliano has an agreement with CDI to utilize treated wastewater for irrigation. Water Reclamation Requirements Order No. 92-057 describes the reclamation area to be planted with grapes, alfalfa, and

cotton and authorizes discharge of treated wastewater up to 0.30 mgd for flood irrigation of vineyards, fodder, fiber, seed, feed, and pasture. In Order 94-295 the reclamation area is described to include grapes, alfalfa, and cotton and authorizes discharge of treated wastewater up to 2.5 mgd for flood irrigation.

CDI reports that wastewater has not been applied to the reclamation area since August 2004. Mr. Pitigliano reports he discontinued receiving water from CDI because the salinity in the wastewater damaged his almond trees. He may be able to receive water in the future if the salinity is reduced. The November 2006 RWD states use of wastewater to irrigate crops on the Pitigliano property will be limited to that which will meet the agronomic nitrogen requirements of table grapes or other crops grown. Water is pumped to the Pitigliano property via two 1,700-gpm pumps. CDI proposes to operate the pumps intermittently during the irrigation season depending upon crop needs. CDI proposes to monitor total nitrogen of the effluent and limit irrigation to that which would not exceed crop requirements. The 2006 RWD states that "effluent would be diluted with well or ditch water or the effluent irrigation would be cut off when sufficient nitrogen has been applied."

As reclamation Order No. 92-057 does not reflect current conditions and needs to be updated, the Order is rescinded concurrent with adoption of this Order. Thus, continued discharge of treated process wastewater and non-process wastewater to the adjacent Pitigliano Property for reclamation is not authorized. However, CDI should continue to pursue utilization of wastewater for reclamation on adjacent crop land to the maximum extent feasible. If CDI wishes to continue discharge for reclamation, new water reclamation requirements must be adopted that reflect current conditions considering the current crops grown, nutrient availability in the soils, and nutrient contributions from the wastewater. This Order does not continue authorization to discharge to the proposed reclamation area until new water reclamation requirements are adopted or waived. This Order includes a reopener to allow the Order to be modified to allow reclamation if new reclamation requirements are adopted.

4. Order No. 94-295 characterizes Morrison Ditch and Casa Blanca Canal as follows:
  - Morrison Ditch is about 3,000 feet long and designed to deliver surface water from Casa Blanca Canal for crop irrigation.
  - Morrison Ditch is nearly flat and has sufficient freeboard to allow flow to or from Casa Blanca Canal.
  - Casa Blanca Canal flows seasonally and carries surface waters for industrial and agricultural purposes from the San Joaquin River (via the Friant-Kern Canal) and the Tule River, both waters of the United States.
  - Morrison Ditch and Casa Blanca Canal are not fisheries.
  - Casa Blanca Canal occasionally spills to the Tule River.
5. Based on information obtained to prepare the Order herein, the following provides a more detailed and current description of Morrison Ditch and Casa Blanca Canal. By agreement with LTRID, CDI discharges treated wastewater to Morrison Ditch. Wastewater discharged to Morrison Ditch flows north to unlined Casa Blanca Canal.

Casa Blanca Canal flows are reported to average about 100 cfs upstream of Morrison Ditch. The discharge from CDI typically comprises about three to four percent of the total flow in Casa Blanca Canal and according to representatives of LTRID there are times when the only flow in Casa Blanca Canal is the discharge from CDI. From the junction of Morrison/Casa Blanca, Casa Blanca trends west for about nine miles and terminates at Boswell Reservoir near Homeland Canal. When water is present in this section of Casa Blanca Canal the water is extracted and reused by local dairies for crop irrigation or routed to manure ponds. Only in abundant water years and under rare circumstances does water in Casa Blanca Canal flow to Boswell Reservoir for “sinking” (percolation and groundwater recharge within the district). Water in Casa Blanca Canal could also have, but rarely has, been routed to Homeland Canal. The LTRID has the ability to route water from Casa Blanca to the Tule River. Such routing of water would require about three to four miles of northerly travel through other ditches and through five or six control points to reach, and potentially discharge to, the Tule River.

6. As reported by LTRID, the following provides a summary of water deliveries routed to Casa Blanca Canal from the Friant Water Authority.

Month	Average Monthly Flow 2003-2007 (acre-feet)	Total Flow 2007 (acre-feet)	Month	Average Monthly Flow 2003-2007 (acre-feet)	Total Flow 2007 (acre-feet)
January	569	0	July	8,370	5,851
February	1,227	0	August	5,277	0
March	1,044	0	September	1,314	0
April	1,919	0	October	0	0
May	4,656	0	November	0	0
June	7,019	2,304	December	0	0

7. Discharge of treated wastewater from the unlined storage/percolation ponds to Morrison Ditch is identified in this Order as Discharge 001. Discharge of wastewater from the lined treatment ponds to the unlined storage/percolation ponds is identified as Discharge 002.
8. As depicted on interagency maps prepared by the Department of Water Resources for the Tulare Lake Hydrologic Basin Planning Area (August 1986), the discharge occurs within the Tule Delta Hydrologic Area (558.20) of the South Valley Floor Hydrologic Unit. The Tulare Lake Basin Plan identifies existing and probable beneficial uses for the Tule River.
9. The discharge occurs in Detailed Analysis Unit (DAU) 243 of the Tule Basin Hydrologic Unit of the Tulare Lake Basin. The Tulare Lake Basin Plan identifies specific groundwater beneficial uses for DAU 243.

10. Discharge of wastewater to Morrison Ditch and subsequent conveyance via Casa Blanca Canal and reuse for agricultural purposes also occurs within the Tule Delta Hydrologic Area of the South valley Floor Hydrologic Unit.

11. The Tulare Lake Basin Plan does not specifically identify beneficial uses for Morrison Ditch or Casa Blanca Canal.

#### D. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

A summary of effluent limitations contained in Order No. 94-295 for discharge of treated process and non-process wastewater from the stabilization pond to the storage ponds, for discharge to Morrison Ditch (Discharge Point 001), and representative (i.e., reflects current discharge characteristics) monitoring data are presented in the following table. The limitations and historic data for discharge to the reclamation area (Pitigliano Property, Discharge Point 002) are not summarized in the table since discharge at this location has not occurred for several years and the continued discharge is not authorized in this Order.

**Table F-2. Historic Effluent Limitations and Monitoring Data**

Location/Parameter	Units	Effluent Limitation		Monitoring Data (January 2007 to September 2007)
		30-Day Average	Daily Maximum	Monthly Average
Pond 2				
Flow (treated process)	mgd	--	0.12	0.77
Flow (non-process)	mgd	--	0.33	0.32
Biochemical Oxygen Demand (BOD <sub>5</sub> )	lbs/100 lbs BOD input <sup>1</sup>	0.008	0.016	0.40
Total Suspended Solids (TSS)	lbs/100 lbs BOD input <sup>1</sup>	0.010	0.020	1.95
Discharge Point 001				
Flow	mgd	--	2.5	1.25
BOD <sub>5</sub>	mg/L	40	80	136
TSS	mg/L	40	80	837
Settleable Solids	ml/L	0.1	0.5	0.6
Boron	mg/L	--	1.0	0.15
Chlorides	mg/L	--	175	48.5

<sup>1</sup> Pounds of BOD<sub>5</sub> input calculated by multiplying the pounds of fats, proteins, and carbohydrates of input materials by factors of 0.89, 1.031, and 0.691, respectively.

For discharge to Pond 2 and discharge to Morrison Ditch, Discharge Point 001, Order No. 94-295 established limitations for pH of not less than 6.0 or greater than 9.0. Between January 2007 and September 2007, pH of wastewater discharged to Pond 2

ranged from 7.4 to 7.8, and pH of wastewater discharged at Discharge Point 001 ranged from 7.2 to 8.9.

Order No. 94-295 established effluent limitation for mineralization, as measured by EC, to not exceed the average EC of the source water plus 500 umhos/cm, or a maximum of 1,000 umhos/cm, whichever is less. The Order did not specify the location or averaging period for determining compliance with the EC limitation. Between 2002 and 2007, the annual average EC of the source water averaged 217 umhos/cm. The highest annual average was 230 umhos/cm in 2003. Therefore, for compliance determination, the applicable EC effluent limit would be about 717 umhos/cm. For EC measurements collected in 2007, CDI wastewater EC averaged 1,021 umhos/cm for discharge to Pond 1B, 852 umhos/cm for discharge to Pond 4, and 720 umhos/cm for discharge to Morrison Ditch.

Order No. 94-295 also established an effluent limitation for total coliform organisms at Discharge Point 001. The Order specifies total coliform organisms at a daily maximum of 240 most probable number per 100 milliliters (MPN/100 ml) and a seven-day median of 23 MPN/100 ml. For effluent monitoring data reported from January 2007 to September 2007, the Discharger did not report coliform results for wastewater discharged at Discharge Point 001. However, the Discharger reported microbiologic results for heterotrophic plate counts on samples collected from Pond 4. Sampling and analysis for heterotrophic plate count was generally conducted once per month. For samples collected from Pond 4, monthly maximum heterotrophic plate counts ranged from 140,000 to 19,000,000 colony forming units per milliliter (CFU/ml).

Effluent samples (Discharge Point 001) were collected by CDI and analyzed for CTR priority pollutants in October 2001, March 2002, July 2007, and August 2007. A summary of the results of the priority pollutant sampling and other analyses is presented in Section IV.C.

## **E. Compliance Summary**

CDI has a history of violating effluent limitations for flow, electrical conductivity (EC), total suspended solids (TSS), and biochemical oxygen demand (BOD). From January 2004 to December 2007 self-monitoring reports submitted by the Discharger indicate that the 30-day average BOD<sub>5</sub> concentration in the discharge exceeded 40 mg/L eighteen times and the daily BOD<sub>5</sub> concentration exceeded 80 mg/L seventeen times. The reports indicated the 30-day average TSS concentration in the discharge exceeded 40 mg/L thirty-eight times and the daily TSS concentration exceeded 80 mg/L twenty times and the EC limitation in No. B.5 of WDRs Order No. 94-295 for wastewater discharged from unlined storage ponds to the canal was exceeded 152 times in 2004, 126 times in 2005, 105 times in 2006, 43 times in 2007, and continues to be exceeded in 2008. In response to ongoing violations of Order No. 94-295, Regional Water Board staff issued Notice of Violations to the Discharger on 15 November 2001 and again on 13 September 2006. A proposed Cease and Desist Order accompanies this Order.

## F. Planned Changes

The September 2006 Notice of Violation required CDI to submit a description of Facility expansions and upgrades to the WWTF. The November 2006 RWD describes proposed improvements to the WWTF to address violations of waste discharge requirements for BOD, effluent pH, flow, EC, and DO. The proposed improvements include the following:

1. Add wastewater evaporator capacity or a reverse osmosis system to reduce effluent EC.
2. Convert Pond 2 into three lined treatment ponds with aeration. One of the three may be used for biosolids (pond solids) digestion and storage.
3. Install pumps to return treated effluent to Ponds A and B for possible denitrification.
4. Adjustments or additions to aeration and mixing capacity.
5. Complete piping and plumbing improvements to Ponds A and B to improve flow distribution and capacity.
6. Construct five new storage/percolation ponds (Ponds 5 through 9) to provide additional holding and disposal capacity.
7. Additional internal plant controls and management practices to reduce dissolved solids discharges.
8. Installation of a caustic recovery system to reduce chemical usage.

## III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in Section II of the Limitations and Discharge Requirements (Findings). This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

### A. Legal Authority

See Limitations and Discharge Requirements - [Findings](#), Section II.C.

### B. California Environmental Quality Act (CEQA)

See Limitations and Discharge Requirements - Findings, Section II.E.

### C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition – Revised 2004* (Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.

The Tulare Lake Basin Plan does not specifically identify beneficial uses for Morrison Ditch or Casa Blanca Canal. For the Tule River (below Lake Success), the Basin Plan designates the following beneficial uses: municipal and domestic supply (MUN); agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), water contact recreation (REC-1), non-contact water recreation (REC-2), warm freshwater habitat (WARM), wildlife habitat (WILD), and ground water recharge (GWR). The discharge occurs in the Tule Basin Hydrologic Unit



(Detailed Analysis Unit 243). The designated beneficial uses of groundwater in DAU 243 are MUN, AGR, IND, PRO, and WILD. The Basin Plan incorporates State Water Board Resolution No. 88-63. As such, the quality of water in Morrison Ditch and Casa Blanca Canal should be considered suitable or potentially suitable for municipal or domestic supply. Also, the canal waters are waters of the U.S. and the quality of water in the canals must be maintained to meet the federal Clean Water Act threshold of “swimmable and fishable” and the CTR states that application of aquatic life criteria/objectives are based on the presence in all waters of some aquatic life designation. Thus, applicable water quality criteria/objectives for waters in Morrison Ditch and Casa Blanca Canal should be consistent with the beneficial uses of MUN by rule, AGR and GWR by design, and REC-1 and WARM.

The Basin Plan on page II-1 states: *“Protection and enhancement of beneficial uses of water against quality degradation is a basic requirement of water quality planning under the Porter-Cologne Water Quality Control Act. In setting water quality objectives, the Regional Water Board must consider past, present, and probable future beneficial uses of water.”* and with respect to disposal of wastewaters states that *“...use of waters for disposal of wastewaters is not included as a beneficial use...and are subject to regulation as activities that may harm protected uses.”*

The federal CWA Section 101(a)(2), states: *“it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.”* Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. 40 CFR 131.2 and 131.10 require States to adopt water quality standards which consider use and value of water for public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. 40 CFR 131.3(e) defines existing beneficial uses as those uses actually attained after November 28, 1975, whether or not they are included in the water quality standards. 40 CFR 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

2. **Antidegradation Policy.** 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board’s Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in the Fact Sheet (Attachment F, Section IV.D.4.) the discharge is consistent with the antidegradation provisions of 40 CFR section 131.12 and State Water Board Resolution 68-16.

3. **Anti-Backsliding Requirements.** See Limitations and Discharge Requirements – Findings, Section II.O.
4. **Emergency Planning and Community Right to Know Act – Not Applicable.**
5. **Storm Water Requirements.** USEPA promulgated Federal Regulations for storm water on November 16, 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from manufacturing facilities where raw materials used in food processing or production are exposed to storm water. All storm water discharges from the Facility are either retained in an onsite storm water basin or routed through the WWTF, and as such, regulation under the General Permit for Discharges of Storm Water Associated with Industrial Activities (State Water Resources Control Board, Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001) is not required.
6. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code Sections 2050 to 2097) or the Federal Endangered Species Act (16 USCA Sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

**D. Impaired Water Bodies on CWA 303(d) List – Not Applicable**

**E. Other Plans, Policies and Regulations – Not Applicable**

**IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS**

Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto that are applicable to the discharge are contained herein.

The federal CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 USC 1311(b)(1)(C); 40 CFR 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to 40 CFR 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that “*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.*” 40 CFR 122.44(d)(1)(vi) further provides that “[w]here a state has not established a water quality criterion for a

*specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.”*

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards, and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Regional Water Board's Basin Plan, page IV-21, contains an implementation policy (“Application of Water Quality Objectives”) that specifies that the Regional Water Board “*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.*” This Policy complies with 40 CFR 122.44(d)(1). With respect to narrative objectives, the Regional Water Board must establish effluent limitations using one or more of three specified sources, including (1) EPA's published water quality criteria, (2) a proposed state criterion (*i.e.*, water quality objective) or an explicit state policy interpreting its narrative water quality criteria (*i.e.*, the Regional Water Board's “Policy for Application of Water Quality Objectives”)(40 CFR 122.44(d)(1) (vi) (A), (B) or (C)), or (3) an indicator parameter. The Basin Plan contains a narrative objective requiring that: “*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*” (narrative toxicity objective). The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, discoloration, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses.

## **A. Discharge Prohibitions**

1. As stated in Section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the Facility. 40 CFR 122.41 (m), defines “bypass” as the intentional diversion of waste streams from any portion of a treatment facility. This section of 40 CFR 122.41 (m)(4) prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. The State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites 40 CFR 122.41(m) as allowing bypass only for essential maintenance to assure efficient operation.

2. The prohibitions limit the discharge to the unavoidable wastewater produced by milk processing activities as described by the Discharger and only as authorized by the Order.

## **B. Technology-Based Effluent Limitations**

### **1. Scope and Authority**

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of best practicable treatment control technology (BPT), best available technology economically achievable (BAT), best conventional pollutant control technology (BCT), and new source performance standards (NSPS). Section 402(a)(1) of the CWA and 40 CFR 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the permit writer must consider specific factors outlined in 40 CFR 125.3.

Specific effluent limitations applicable to the discharge are included in 40 CFR 405 – Dairy Products Processing Point Source Category, containing effluent limitation guidelines that are applicable to the discharge.

### **2. Applicable Technology-Based Effluent Limitations**

- a. **Flow.** From Pond 1 to the unlined storage ponds, Order No. 94-295 authorizes discharge of what were historically termed treated “process” and “non-process” wastewaters at maximum flow rates of 0.12 million gallons per day (mgd) and 0.33 mgd, respectively. By USEPA definition, the “non-process” wastewater is classified as a process flow and this permit does not distinguish between waste streams. For discharge to Morrison Ditch and to the Pitigliano property, Order No. 94-295 authorizes daily maximum flow rates of 2.5 mgd based on maximum pump capacity. Since initial operation in 1994, CDI expanded its milk processing capability in 1997, 1999, 2000, 2002, and 2006. Due to expansion of the milk processing capacity of the Facility and resultant increase of wastewater generated for treatment and discharge, CDI has exceeded the flow limits of the existing Order and has requested the limitations for discharge flow volumes to the unlined storage ponds to increase to an average monthly wastewater discharge of 1.3 mgd, and an increase in the maximum daily discharge to 3.1 mgd. For discharge to Morrison Ditch, CDI requests the daily maximum flow limit be increased to 4.32 mgd with a monthly maximum discharge of 40 million gallons.

As described herein, the increase of wastewater flows is due to economic expansion of the area and the proposed increase in authorized discharge of wastewater from treatment to the unlined storage ponds will be disposed of primarily by percolation in the proposed new storage ponds. For discharge of wastewater to unlined ponds (Discharge 002), this Order authorizes an average monthly wastewater flow of 1.3 mgd and a maximum daily discharge flow of

3.1 mgd. For discharge to Morrison Ditch (Discharge 001), this Order authorizes a daily maximum flow limit of 4.32 mgd, an increase over the 2.5 mgd daily maximum flow limit from the previous Order. This discharge is limited to a monthly maximum of 40 million gallons, which is below the total allowed under Order No. 94-295 (up to 77.5 mgd per month, based on the maximum daily flow of 2.5 mgd). On a monthly basis, the flow limits for Discharge to Morrison Ditch are more stringent than those included in the existing Order.

- b. **BOD/TSS/pH.** 40 CFR 405 – Dairy Products Processing Point Source Category contains effluent limitation guidelines that are applicable to the discharge. CDI reports that the Facility manufactures products applicable to four subcategories of 40 CFR 405 (Subpart B – Fluid Products, Subpart D – Butter, Subpart I – Condensed Milk, and Subpart J – Dry Milk) that each use different factors to calculate Five-day Biochemical Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS) effluent limitations. The limitations for pH are the same for each of the four categories and are specified to be within the range of 6.0 to 9.0. For discharge of effluent from Pond 1 to the storage ponds and to Morrison Ditch, Order No. 94-295 specified the pH to not be less than 6.0 or greater than 9.0. For discharge of wastewater to the storage ponds, this Order carries over the effluent limitations for pH. The more stringent Basin Plan limitation of the pH to not be less than 6.5 or greater than 8.3 has been applied for the discharge to Morrison Ditch. The limitations for BOD<sub>5</sub> and TSS are based on the mass and composition (i.e., fats, proteins, and carbohydrates) of the input materials and the type of end products (e.g., milk, cream, butter, dry milk, etc.). Because the Facility was constructed after 1982, the discharge is subject to effluent limitations applicable to standards of performance for new sources. For discharge of effluent from Pond 1 to the storage ponds, Order No. 94-295 prescribed BOD<sub>5</sub> and TSS effluent limits based solely on the Butter subcategory (the most stringent of the four). The Information Sheet of Order No. 94-295 notes that the BOD<sub>5</sub> and TSS limits were proposed by the Discharger (due to high bacterial content of milk waste) and concurred by Regional Water Board staff.

For 2007 production data reported by CDI, the following tables summarize the calculations for BOD<sub>5</sub>/TSS limits per 40 CFR 405. Per USEPA guidance, the calculations were derived using average values for mass of input materials. The calculations consider the (a) daily average mass of source/input materials, (b) average percent composition and calculated mass for fats, proteins, and carbohydrates of the materials, (c) the resultant total mass BOD<sub>5</sub> input, and (d) the computed BOD<sub>5</sub> and TSS limits utilizing the published standards of performance for new sources for each subcategory.

**40 CFR 405 Subpart B – Fluid Products Subcategory**  
**405.25 - Standards of performance for new sources.**

Raw Milk to Skim, Cream, and Ultra-Filtration	Mass (lbs/day)	Fat (F) Content	Protein (P) Content	Carbohydrate (C) Content
	8,700,000	3.62%	3.26%	4.94%

(1)	Mass F,P,C: % x Input Mass (lbs/day) ►	314,940	283,620	429,780
(2)	Factor for BOD <sub>5</sub> Input ►	0.89	1.031	0.691
(3)	BOD <sub>5</sub> Input: (1)x(2) (lbs/day) ►	280,297	292,412	296,978
(4)	Total BOD <sub>5</sub> Input: (3)F+P+C (lbs/day) ►	869,687		
(5)	40 CFR Factors for BOD <sub>5</sub> Daily Max and 30-Day Average (lbs/100lbs BOD <sub>5</sub> Input) ►	0.074	0.037	
(6)	<b>BOD<sub>5</sub> Daily Max and 30-Day Average: (5)x(4)/100 (lbs/day) ►</b>	<b>644</b>	<b>322</b>	
(7)	40 CFR Factors for TSS Daily Max and 30-Day Average (lbs/100lbs BOD <sub>5</sub> Input) ►	0.093	0.046	
(8)	<b>TSS Daily Max and 30-Day Average: (7)x(4)/100 (lbs/day) ►</b>	<b>809</b>	<b>400</b>	

**40 CFR 405 Subpart D – Butter Subcategory**  
**405.45 - Standards of performance for new sources.**

Cream to Butter		Mass (lbs/day)	Fat (F) Content	Protein (P) Content	Carbohydrate (C) Content
		438,188	43.40%	1.78%	2.64%
(1)	Mass F,P,C: % x Input Mass (lbs/day) ►	190,174	7,800	11,568	
(2)	Factor for BOD <sub>5</sub> Input ►	0.89	1.031	0.691	
(3)	BOD <sub>5</sub> Input: (1)x(2) (lbs/day) ►	169,254	8,042	7,994	
(4)	Total BOD <sub>5</sub> Input: (3)F+P+C (lbs/day) ►	185,290			
(5)	40 CFR Factors for BOD <sub>5</sub> Daily Max and 30-Day Average (lbs/100lbs BOD <sub>5</sub> Input) ►	0.016	0.008		
(6)	<b>BOD<sub>5</sub> Daily Max and 30-Day Average: (5)x(4)/100 (lbs/day) ►</b>	<b>30</b>	<b>15</b>		
(7)	40 CFR Factors for TSS Daily Max and 30-Day Average (lbs/100lbs BOD <sub>5</sub> Input) ►	0.020	0.010		
(8)	<b>TSS Daily Max and 30-Day Average: (7)x(4)/100 (lbs/day) ►</b>	<b>37</b>	<b>19</b>		

**40 CFR 405 Subpart I – Condensed Milk Subcategory**  
**405.95 - Standards of performance for new sources.**

Skim to Condensed		Mass (lbs/day)	Fat (F) Content	Protein (P) Content	Carbohydrate (C) Content
		51,306	0.20%	12.70%	19.20%
(1)	Mass F,P,C: % x Input Mass (lbs/day) ►	103	6,516	9,851	

(2)	Factor for BOD <sub>5</sub> Input ►	0.89	1.031	0.691
(3)	BOD <sub>5</sub> Input: (1)x(2) (lbs/day) ►	91	6,718	6,807
(4)	Total BOD <sub>5</sub> Input: (3)F+P+C (lbs/day) ►	13,616		
(5)	40 CFR Factors for BOD <sub>5</sub> Daily Max and 30-Day Average (lbs/100lbs BOD <sub>5</sub> Input) ►	0.076	0.038	
(6)	<b>BOD<sub>5</sub> Daily Max and 30-Day Average: (5)x(4)/100 (lbs/day) ►</b>	<b>10</b>	<b>5</b>	
(7)	40 CFR Factors for TSS Daily Max and 30-Day Average (lbs/100lbs BOD <sub>5</sub> Input) ►	0.095	0.048	
(8)	<b>TSS Daily Max and 30-Day Average: (7)x(4)/100 (lbs/day) ►</b>	<b>13</b>	<b>7</b>	

**40 CFR 405 Subpart J – Dry Milk Subcategory**  
**405.105 - Standards of performance for new sources.**

Skim to Dryer		Mass (lbs/day)	Fat (F) Content	Protein (P) Content	Carbohydrate (C) Content
		834,348	0.25%	18.50%	28.00%
(1)	Mass F,P,C: % x Input Mass (lbs/day) ►	2,086	154,354	233,617	
(2)	Factor for BOD <sub>5</sub> Input ►	0.89	1.031	0.691	
(3)	BOD <sub>5</sub> Input: (1)x(2) (lbs/day) ►	1,856	159,139	161,430	
(4)	Total BOD <sub>5</sub> Input: (3)F+P+C (lbs/day) ►	322,425			
(5)	40 CFR Factors for BOD <sub>5</sub> Daily Max and 30-Day Average (lbs/100lbs BOD <sub>5</sub> Input) ►	0.036	0.018		
(6)	<b>BOD<sub>5</sub> Daily Max and 30-Day Average: (5)x(4)/100 (lbs/day) ►</b>	<b>116</b>	<b>58</b>		
(7)	40 CFR Factors for TSS Daily Max and 30-Day Average (lbs/100lbs BOD <sub>5</sub> Input) ►	0.045	0.023		
(8)	<b>TSS Daily Max and 30-Day Average: (7)x(4)/100 (lbs/day) ►</b>	<b>145</b>	<b>74</b>		

**Summary and Totals for BOD<sub>5</sub> and TSS Limits**

<b>BOD<sub>5</sub></b>	<b>Daily Max (lbs/day)</b>	<b>30-Day Average (lbs/day)</b>
Subpart B – Fluid Products Subcategory	644	322
Subpart D – Butter Subcategory	30	15
Subpart I – Condensed Milk Subcategory	10	5
Subpart J – Dry Milk Subcategory	116	58
<b>BOD<sub>5</sub> Total: ►</b>	<b>800</b>	<b>400</b>

<b>TSS</b>		
Subpart B – Fluid Products Subcategory	809	400
Subpart D – Butter Subcategory	37	19
Subpart I – Condensed Milk Subcategory	13	7
Subpart J – Dry Milk Subcategory	145	74
<b>TSS Total: ►</b>	<b>1,004</b>	<b>499</b>

Per U.S. EPA guidance, the calculated mass limits for BOD<sub>5</sub> and TSS were converted to concentration limits using average wastewater discharge flows (as reported by CDI from January 2007 to September 2007).

#### Applicable BOD<sub>5</sub> and TSS Limits

	<b>Daily Max (lbs/day)</b>	<b>30-Day Average (lbs/day)</b>
<b>BOD<sub>5</sub></b>	<b>800</b>	<b>400</b>
<b>TSS</b>	<b>1,004</b>	<b>499</b>
	<b>Daily Max (mg/L)</b>	<b>30-Day Average (mg/L)</b>
<b>BOD<sub>5</sub></b>	<b>88<sup>1</sup></b>	<b>44<sup>1</sup></b>
<b>TSS</b>	<b>110<sup>1</sup></b>	<b>55<sup>1</sup></b>

<sup>1</sup>Concentration limits based on average wastewater flow rate of 1.09 mgd.

For industrial wastewater, the Tulare Lake Basin Plan requires discharges to comply with water quality objectives, federal regulations, and limits the increase in EC of a point source discharge to surface water or land to a maximum of 500 umhos/cm. According to the Basin Plan, the effluent limits established for municipal waste discharges generally apply to industrial wastes and the objectives for discharge of wastewater to land would apply to this discharge. Facilities which discharge or are designed to discharge in excess of 1 million gallons per day must provide removal of 80 percent or reduction to 40 mg/L, whichever is more restrictive, of both BOD<sub>5</sub> and TSS.

For discharge to Morrison Ditch Order No. 94-295 authorized effluent limits for BOD<sub>5</sub> and TSS at 40 mg/L (monthly average) and 80 mg/L (daily maximum). For discharge of wastewater to the reclamation property, Order No. 94-295 authorized effluent limits for BOD at 40 mg/L (monthly average) and 80 mg/L (daily maximum). The Information Sheet of Order No. 94-295 notes that the BOD and TSS limits for discharge to Morrison Ditch were proposed by the Discharger and concurred by Regional Water Board staff. The November 2006 RWD states that the cow water will generally meet discharge requirements “assumed to be 40 mg/L BOD and TSS” without treatment.

The calculated effluent limits (per 40 CFR 405) exceed the applicable Basin Plan objectives and also exceed the limits for BOD and TSS as specified in Order



No. 94-295 for discharge of effluent to the storage ponds. This Order carries over and continues authorization of the effluent limitations for BOD and TSS at 40 mg/L (monthly average) and 80 mg/L (daily maximum) as requested by CDI and consistent with Basin Plan objectives. It also includes the mass-based limitations calculated above for the discharge to Morrison Ditch.

**Table F-3. Summary of Technology-Based Effluent Limitations – Discharge 001**

Parameter	Units	Effluent Limitations	
		Monthly Average	Maximum Daily
Flow	mgd	--	4.32
BOD <sub>5</sub>	mg/L	40	80
	lb/day	400	800
TSS	mg/L	40	80
	lb/day	500	1000

**Table F-4. Summary of Technology-Based Discharge Specifications – Discharge 002**

Parameter	Units	Discharge Specifications	
		Monthly Average	Maximum Daily
Flow <sup>1</sup>	mgd	1.3	3.1
pH	standard units	1	1

<sup>1</sup> Within the range of 6.0 to 9.0.

## C. Water Quality-Based Effluent Limitations (WQBELs)

### 1. Scope and Authority

As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an in-stream excursion above any State water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water (as specified in the Basin Plan), and achieve applicable water quality objectives and criteria that are contained in other State plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

### 2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

- a. **Receiving Water.** The receiving waters are groundwater, Morrison Ditch, and Casa Blanca Canal. The designated beneficial uses of the underlying groundwater (DAU 243) are MUN, AGR, IND, PRO, and WILD. The Tulare Lake Basin Plan does not specifically identify beneficial uses for Morrison Ditch or Casa Blanca Canal. For the Tule River (below Lake Success), the Basin Plan designates the applicable beneficial uses: MUN; AGR, REC-1, and WARM. The beneficial uses for waters in Morrison Ditch and Casa Blanca Canal are MUN,

AGR, GWR, REC-1, and WARM.

- b. **Hardness.** While no effluent limitation for hardness is necessary in this Order, hardness is critical to the assessment of the need for, and the development of, effluent limitations for certain metals. For purposes of establishing water quality-based effluent limitations, a reported hardness value of 21.2 mg/L as CaCO<sub>3</sub> (lowest effluent sampling data) was used.
- c. **Assimilative Capacity/Mixing Zone.** Based on the available information, the worst-case dilution is assumed to be zero to provide protection for the receiving water beneficial uses. The impact of assuming zero assimilative capacity within the receiving water is that discharge limitations are end-of-pipe limits with no allowance for dilution within the receiving water.

### 3. Determining the Need for WQBELs

- a. The Regional Water Board conducted the reasonable potential analysis (RPA) in accordance with Section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Regional Water Board may use the SIP as guidance for water quality-based toxics control.<sup>1</sup> The SIP states in the introduction “*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency.*” Therefore, in this Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents. The RPA was completed using data collected by the Discharger in October 2001, March 2002, July 2007, and August 2007. A summary of the RPA and CTR analysis is included as Attachment G of this Order. For each constituent of concern, the results of the RPA are discussed in more detail below.
- b. **Ammonia.** Order 94-295 did not require collection of ammonia effluent data; however, data collected in 2000 and 2001 indicated the effluent concentration exceeded 10 mg/L.

The maximum permitted effluent pH is 8.3 as the Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.3. To protect against the worst-case short-term exposure of an organism, a pH value of 8.3 was used to derive the acute ammonia criterion. The resulting acute criterion is 3.71 mg/L.

The maximum observed 30-day rolling average temperature and the maximum observed pH of the receiving water data submitted by the Discharger for the period from January 2005 through February 2008 were used to calculate 30-day chronic criteria. The maximum observed 30-day temperature for May through October was 30.0°C. The maximum observed pH value was 8.7. Using the pH values and the worst-case temperature values on a rolling 30-day basis, the

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<sup>1</sup> See, Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City)

resulting 30-day CCC is 0.93 mg/L. The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCCs of 0.9, the 4-day average concentration that should not be exceeded is 2.32 mg/L.

Therefore, ammonia in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life, resulting in a violation of the Basin Plan's narrative toxicity objective.

The Regional Water Board calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long term average discharge condition (LTA). However, USEPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day chronic criteria. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day chronic criteria was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day, and 30-day chronic criteria is then selected for deriving the AMEL and the MDEL. The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures

An AMEL and MDEL for ammonia of 0.86 mg/L and 2.25 mg/L, based on SIP procedures. It appears that the Discharger may be in immediate non-compliance upon issuance of the permit. New or modified control measures may be necessary to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Basin Plan includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives adopted after 25 September 1995. The WQBELs for ammonia are based on a new interpretation of the narrative standard for protection of receiving water beneficial uses. Therefore, a compliance schedule for compliance with the ammonia effluent limitations is established in the Order. An interim performance-based maximum daily effluent limitation of 45.0 mg/L has been established in this Order. The interim limitation was determined as described in Attachment F, Section IV.E.1., and is in effect until no later than **31 July 2013**. As part of the compliance schedule, this Order requires the Discharger to submit a work plan and time schedule to conduct a treatment feasibility study within six months and to submit a report within a year to achieve compliance with the final ammonia effluent limitations.

- c. **Arsenic.** The Basin Plan includes a water quality objective that "*waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.*" For the four effluent samples collected October 2001, March 2002, July 2007, and August 2007, arsenic concentrations were reported to be none detected at less than 3.0 ug/L, 2.2 mg/L, 1.9 ug/L, and 1.5 ug/L (estimated

value). The 2.2 mg/L result is an outlier and likely represents a reporting error by the analytical laboratory (e.g., the results should have been reported as 2.2 ug/L). The remaining results for arsenic do not exceed the USEPA Primary Maximum Contaminant Level (MCL) for arsenic of 10 ug/L. The available data is not sufficient to determine whether the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the criterion for arsenic. Therefore, this Order requires monitoring for arsenic (i.e., priority pollutants) at Discharge 001 and includes a reopener to allow the Regional Water Board to reconsider the Order if the monitoring demonstrates the discharge has a reasonable potential to cause an exceedance of the water quality criteria.

- d. **Bis (2-ethylhexyl) phthalate.** Bis (2-ethylhexyl) phthalate is used primarily as one of several plasticizers in polyvinyl chloride (PVC) resins for fabricating flexible vinyl products. The State MCL for bis (2-ethylhexyl) phthalate is 4 ug/L and the USEPA MCL is 6 ug/L. The NTR criterion for Human health protection for consumption of water and aquatic organisms is 1.8 ug/L and for consumption of aquatic organisms only is 5.9 ug/L.

For the four effluent samples collected October 2001, March 2002, July 2007, and August 2007, bis (2-ethylhexyl) phthalate concentrations were reported to be none detected at less than 0.325 ug/L, none detected at less than 0.95 ug/L, 5.3 ug/L, and none detected at less than 0.98 ug/L. Bis (2-ethylhexyl) phthalate is a common laboratory contaminant and there is not an obvious source at CDI. Thus, the available data is not sufficient to determine whether the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the State MCL or NTR criterion for bis (2-ethylhexyl) phthalate. Therefore, this Order requires monitoring for bis (2-ethylhexyl) phthalate (i.e., priority pollutants) at Discharge 001 and includes a reopener to allow the Regional Water Board to reconsider the Order if the monitoring demonstrates the discharge has a reasonable potential to cause an exceedance of the water quality criteria.

- e. **Dioxin.** The CTR includes criteria for 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD). In addition to this compound, the SIP identifies congeners of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) that exhibit toxic effects similar to those of 2,3,7,8-TCDD. The U.S. EPA published toxic equivalency factors (TEFs) for 16 of the congeners. The TEFs express the relative toxicity of the congeners compared to 2,3,7,8-TCDD (whose TEF equals 1.0). The World Health Organization has provided revised TEF values for three of the congeners. The CTR criterion for Human health protection for consumption of water is 0.000013 pg/L.

Four effluent samples were collected August 2001, January 2002, July 2007, and August 2007 and analyzed for 2,3,7,8-TCDD and the dioxin congeners. None of the samples returned detectable concentrations of 2,3,7,8-TCDD at laboratory detection limits of 0.847 pg/L; 0.818 pg/L, 8.5 pg/L and 4.8 pg/L. Because each of the laboratory detection limits were greater than the CTR criterion for 2,3,7,8-TCDD, the available data is not sufficient to determine whether the

discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion. Detections of one or more congeners were reported for the samples collected August 2001 (one congener), January 2002 (six congeners), and August 2007 (one congener). For each of the detected congeners, adjusting the reported concentrations with the published TEF's yields concentrations which exceed the CTR criterion for 2,3,7,8,-TCDD. There is no known source of dioxins at CDI. Additional monitoring is necessary to evaluate the detections of dioxin congeners in the effluent. This Order requires monitoring for 2,3,7,8,-TCDD and associated congeners (i.e., priority pollutants) at Discharge 001 and includes a reopener to allow the Regional Water Board to reconsider the Order if the monitoring demonstrates the discharge has a reasonable potential to cause an exceedance of the water quality criteria.

- f. **pH.** At Discharge 002, this Order applies the technology-based discharge specification for pH of not less than 6.0 or greater than 9.0. The Basin Plan includes a water quality objective for surface waters that the "...*pH shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH.*" For Discharge 001, effluent Limitations for pH are included in this Order based on the Basin Plan objectives for pH.
- g. **Salinity.** Electrical conductivity (EC) is an indicator of salinity. Order No. 94-295 specifies effluent limits for salinity in accordance with the Tulare Lake Basin Plan. Order No. 94-295 limits mineralization, as measured by EC, to not exceed the average EC of the source water plus 500 umhos/cm, or a maximum of 1,000 umhos/cm, whichever is less. The Order does not include a description of an effluent averaging period and it is not discussed elsewhere in Order No. 94-295. Nor is the period over which to average the source water EC defined. For discharge to Morrison Ditch (Discharge Point 001), Order No. 94-295 specified daily maximum effluent limits for chlorides and boron at 175 mg/L and 1.0 mg/L, respectively. The Discharger has not requested changes to the salinity limits.

As described previously, the source water from the Facility is supplied by two wells and for EC and flow data reported by CDI between January 2005 and September 2007, the flow-weighted average EC of the source water (per Basin Plan guidance to use flow-weighted average for more than one source), is 217 umhos/cm. Therefore, for compliance determination, the current applicable EC effluent limit would be about 717 umhos/cm.

As described previously, for EC measurements collected from January 2007 to September 2007, CDI wastewater EC averaged 1,021 umhos/cm for discharge to Pond 1B, 852 umhos/cm for discharge to Pond 4, and 767 umhos/cm for discharge to Morrison Ditch. During inspection of the Facility in December 2004, CDI staff stated that discharge from Pond 4 was blended with well water to meet EC limits. During subsequent inspection conducted October 2005, CDI staff suggested that process wastewater was diluted with non-process wastewater prior to sampling for compliance with discharge specifications. Also, LTRID has

reportedly routed canal water to CDI storage ponds for percolation at times when pond capacity was available. Based on the discharge monitoring data reported by CDI, unaccounted excess water is apparently entrained within the WWTF process. For discharge monitoring data reported for January to September 2007, the volume of discharge to Morrison Ditch exceeded that of the reported volume of wastewater/cow water for six out of the nine months. On average, CDI reports that 1.09 mgd of wastewater/cow water is generated at the Facility and yet also reports that an average of 1.25 mgd of treated wastewater/cow water is discharged to Morrison Ditch. The water balance presented by CDI suggests that about 43 percent of wastewater flows percolate to groundwater, about 10 percent is lost to evaporation, and about 47 percent is discharged to Morrison Ditch. The reported wastewater and discharge flows are inconsistent with the water balance presented by CDI.

The Basin Plan states that neither surface nor groundwater shall be used to dilute wastes for the primary purpose of meeting waste discharge requirements, where reasonable methods for treating wastes exist. Blending of wastewater with surface or groundwater to promote beneficial reuse of wastewater in a water short area may be allowed where the Regional Water Board determines such reuse is consistent with other regulatory policies set forth or referenced in the Basin Plan.

The November 2006 RWD includes a salinity control plan for the Facility. Measures to reduce salinity in the effluent include a caustic recovery system and the conversion from sodium hydroxide to potassium hydroxide caustics for the CIP system. CDI proposes to add wastewater evaporator capacity or an RO system, and to implement internal measures to reduce EC. With the completed and proposed measures to reduce salinity in the wastewater discharge, the RWD includes a mass balance (identified in Figure 7 of RWD) and concludes that discharge of treated wastewater to unlined Ponds 3 through 9 would have an EC of 647 umhos/cm.

The dilution issues described above make it difficult to determine the true salinity of CDI's existing discharge or the results of salinity minimization measures that have been implemented to date or that are proposed. This Order includes requirements for weekly EC monitoring from the lined ponds to the unlined ponds, from the unlined ponds to the Ditch, and monthly source water monitoring. Additionally, the Order requires the Discharger to submit a technical report describing its dilution practices and provide justification for allowing dilution. The Discharger is also required to submit monthly monitoring reporting dilution water quality, volume and frequency.

- i. **Electrical Conductivity (EC).** The EC limit in this Order is carried over from Order No. 94-295 and is clarified to reflect current application of salinity limits as a rolling annual average. Compliance with the limit will be determined monthly by comparing the rolling annual average of the weekly data

submitted for effluent EC and the rolling annual average of the monthly flow-weighted data submitted for the source water EC. As the typical flow-weighted average EC of the source water is about 217 umhos/cm, the likely annual average limit will be approximately 717 umhos/cm. In the water balance submitted by CDI, compliance with the limit is achievable. The EC limit is applied at the discharge to Morrison Ditch (Discharge 001) and at the discharge to unlined storage ponds (Discharge 002).

This Order includes a reopener that allows the Regional Water Board to adjust flow and EC discharge specifications and effluent limitations should the water balance assumptions prove inadequate or discharge limits require reassessment.

- ii. **Chloride.** The limit for chloride of 175 mg/L is carried over from the existing Order, but now applied as an annual average, per the Basin Plan, for the discharge to unlined storage ponds (Discharge 002). At the discharge to Morrison Ditch (Discharge 001) the limit is carried over from the existing Order, “as is” to avoid antibacksliding. Monitoring data shows CDI can meet the limit for chloride. The annual average limit is based on a calendar year and calculated using monthly averages of available data.
- iii. **Boron.** The limit for boron of 1.0 mg/L is carried over from the existing Order, but also now applied as an annual average, per the Basin Plan, for the discharge to unlined storage ponds (Discharge 002). At the discharge to Morrison Ditch (Discharge 001) the limit is carried over from the existing Order, “as is” to avoid antibacksliding. Monitoring data shows CDI can meet the limit for boron. The annual average limit is based on a calendar year and calculated using monthly averages of available data.
- h. **Settleable Solids.** For discharge of wastewater to Morrison Ditch, Order No. 94-295 specifies effluent limits for settleable solids at a daily maximum of 0.5 ml/L and a 30-day average of 0.1 ml/L. This Order carries over the effluent limits for settleable solids.
- i. **Total Coliform Organisms.** For discharge of wastewater to Morrison Ditch, Order No. 94-295 specifies effluent limits for total coliform organisms at a daily maximum of 240 MPN/100 mL and a 7-day median of 23 MPN/100 mL. The Information Sheet of Order No. 94-295 notes that the limit for total coliform organisms was proposed by the Discharger due to the high bacterial content of the milk waste. This Order carries over the effluent limits for total coliform organisms.
- j. **Zinc.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. The criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for zinc in freshwater are 0.978 for the acute criteria and 0.986 for the chronic criteria. The

lowest reported effluent hardness of 21.2 mg/L was used to calculate the applicable water quality objective/criteria. The applicable chronic criterion (maximum four-day average concentration) and the applicable acute criterion (maximum one-hour average concentration) are both 32 ug/L, as total recoverable.

Four effluent samples were collected October 2001, March 2002, July 2007, and August 2007 for analysis of total recoverable zinc. Total recoverable zinc was detected in the samples collected July and August 2007 at concentrations of 93 ug/L and 130 ug/L; the October 2001 and March 2002 samples returned no detectable concentrations of zinc. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for zinc. An AMEL and MDEL for total zinc of 16 ug/L and 32 ug/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life. CDI may be able to meet the numeric objective for zinc if internal waste streams are appropriately characterized and treated. Also, CDI may have opportunity to alter chemical use within the plant and/or treatment system to reduce zinc in the discharge. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., an interim performance-based maximum daily limitation of 404 ug/L was calculated.

Section 2.1 of the SIP provides that: *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *...“(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.”* The Discharger provided this information on 23 June 2008. The new water quality-based effluent limitations for zinc become effective on **May 18, 2010**.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final zinc effluent limitations. The interim effluent limitations are in effect through **May 17, 2010**.



#### 4. WQBEL Calculations

- a. Effluent limitations for zinc and ammonia were calculated in accordance with Section 1.4 of the SIP. The following paragraphs describe the methodology used for calculating effluent limitations.
- b. **Effluent Limitation Calculations.** In calculating maximum effluent limitations, the effluent concentration allowances were set equal to the criteria/standards/objectives.

$$ECA_{acute} = CMC \qquad ECA_{chronic} = CCC$$

For the human health, agriculture, or other long-term criterion/objective, a dilution credit can be applied. The ECA is calculated as follows:

$$ECA_{HH} = HH + D(HH - B)$$

where:

$ECA_{acute}$  = effluent concentration allowance for acute (one-hour average) toxicity criterion

$ECA_{chronic}$  = effluent concentration allowance for chronic (four-day average) toxicity criterion

$ECA_{HH}$  = effluent concentration allowance for human health, agriculture, or other long-term criterion/objective

CMC = criteria maximum concentration (one-hour average)

CCC = criteria continuous concentration (four-day average, unless otherwise noted)

HH = human health, agriculture, or other long-term criterion/objective

D = dilution credit

B = maximum receiving water concentration

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL).

Human health ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

$$\begin{aligned}
 & \overbrace{\min(M_A ECA_{acute}, M_C ECA_{chronic})}^{LTA_{acute}} \\
 AMEL &= mult_{AMEL} [\min(M_A ECA_{acute}, M_C ECA_{chronic})] \\
 MDEL &= mult_{MDEL} [\min(M_A ECA_{acute}, M_C ECA_{chronic})] \\
 & \underbrace{\hspace{10em}}_{LTA_{chronic}} \\
 MDEL_{HH} &= \left( \frac{mult_{MDEL}}{mult_{AMEL}} \right) AMEL_{HH}
 \end{aligned}$$

where:  $mult_{AMEL}$  = statistical multiplier converting minimum LTA to AMEL  
 $mult_{MDEL}$  = statistical multiplier converting minimum LTA to MDEL  
 $M_A$  = statistical multiplier converting CMC to LTA  
 $M_C$  = statistical multiplier converting CCC to LTA

Water quality-based effluent limitations were calculated for zinc as follows in Table F-5, below.

**Table F-5. WQBEL Calculations for Zinc**

	Acute	Chronic
Criteria, dissolved (µg/L) <sup>(1)</sup>	32	32
Dilution Credit	No Dilution	No Dilution
ECA Multiplier <sup>(3)</sup>	0.321	0.527
LTA	10.272	16.864
AMEL Multiplier (95 <sup>th</sup> %) <sup>(4)(5)</sup>	1.55	<sup>(7)</sup>
<b>AMEL (µg/L)</b>	<b>15.92</b>	<sup>(7)</sup>
MDEL Multiplier (99 <sup>th</sup> %) <sup>(6)</sup>	3.11	<sup>(7)</sup>
<b>MDEL (µg/L)</b>	<b>31.95</b>	<sup>(7)</sup>

<sup>(1)</sup> CTR aquatic life criteria, based on a hardness of 21 mg/L as CaCO<sub>3</sub>.

<sup>(2)</sup> ECA calculated per Section 1.4.B, Step 2 of SIP. This allows for the consideration of dilution.

<sup>(3)</sup> Acute and Chronic ECA Multiplier calculated at 99th percentile per Section 1.4.B, Step 3 of SIP or per Sections 5.4.1 and 5.5.4 of the TSD.

<sup>(4)</sup> Assumes sampling frequency n=>4.

<sup>(5)</sup> The probability basis for AMEL is 95th percentile per Section 1.4.B, Step 5 of SIP or Section 5.5.4 of the TSD.

<sup>(6)</sup> The probability basis for MDEL is 99th percentile per Section 1.4.B, Step 5 of SIP or Section 5.5.4 of the TSD.

<sup>(7)</sup> Limitations based on acute LTA (Chronic LTA > Acute LTA)

Water quality-based effluent limitations were calculated for ammonia as follows in Table F-6, below.

**Table F-6. WQBEL Calculations for Ammonia**

	Acute	Chronic (30-day)	Chronic (4-day)
pH <sup>(1)</sup>	8.3	8.3	N/A
Temperature °C <sup>(2)</sup>	N/A	27.7	N/A
Criteria (mg/L) <sup>(3)</sup>	3.71	0.93	2.32
Dilution Credit	No Dilution	No Dilution	No Dilution
ECA	3.71	0.93	2.32
ECA Multiplier	0.321	0.78	0.592
LTA <sup>(4)</sup>	1.19	.725	1.37
AMEL Multiplier (95th%)	<sup>(5)</sup>	1.19	<sup>(5)</sup>
AMEL (mg/L)	<sup>(5)</sup>	.86	<sup>(5)</sup>
MDEL Multiplier (99th%)	<sup>(5)</sup>	3.11	<sup>(5)</sup>
MDEL (mg/L)	<sup>(5)</sup>	2.25	<sup>(5)</sup>

<sup>(1)</sup> Acute design pH = 8.3 (max. allowed pH), Chronic design pH = 8.2 (max. effluent pH).

<sup>(2)</sup> Temperature = the maximum observed running 30-day average effluent temperature.

<sup>(3)</sup> USEPA Ambient Water Quality Criteria.

<sup>(4)</sup> LTA developed based on Acute and Chronic ECA Multipliers calculated at 99th percentile level per sections 5.4.1 and 5.5.4 of TSD.

<sup>(5)</sup> Limitations based on Chronic(30-day) LTA (Chronic 30-day LTA < Acute LTA < Chronic 4-day LTA)

## 5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E, Section V). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

### D. Final Effluent Limitations

#### 1. Mass-based Effluent Limitations.

40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH, and when the applicable standards are expressed in terms of concentration (e.g. CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

#### 2. Averaging Periods for Discharge Specifications and Effluent Limitations

This Order includes salinity limits expressed as annual averages. For compliance determination, annual average is the arithmetic mean of daily discharge values

collected for a calendar year (January 1 to December 31). For instances of multiple samples in a calendar day, the daily discharge value is the mean of measurements collected within the calendar day.

### 3. Satisfaction of Anti-Backsliding Requirements.

The discharge specifications and effluent limitations authorized in this Order are at least as stringent as those in Order No. 94-295. Thus, the Order is consistent with the anti-backsliding requirements of the CWA and federal regulations.

### 4. Summary of Final Limitations

The following presents a summary of final effluent limitations included in this Order. In general, final effluent limitations are the more stringent of technology based limitations or water quality based limitations:

a. Limitations in IV.A.1, Table 6, as summarized below:

**Table F-7. Effluent Limitations – Discharge 001**

Parameter	Units	Effluent Limitation			Basis
		Daily Maximum	Monthly Average	Annual Average	
Flow	Mgd	4.32	40 million gallons, maximum per month	--	
BOD <sub>5</sub>	mg/L	80	40	--	Basin Plan, BPTC
	lb/day	800	400		40 CFR
TSS	mg/L	80	40	--	Basin Plan, BPTC
	lb/day	1004	499		40 CFR
Electrical Conductivity at 25°C	umhos/cm	--	--	500 plus source or 1,000, whichever is less	Basin Plan
Total Coliform Organisms	MPN/100 mL	240	23	--	Basin Plan, BPJ
Chloride	mg/L	175	--	--	Basin Plan
Boron, Total Recoverable	mg/L	1.0	--	--	Basin Plan
pH <sup>1</sup>	standard		--	--	40 CFR
Zinc <sup>2</sup> , Total Recoverable	ug/L	32	16		CTR/SIP
Ammonia <sup>3</sup>	mg/L	2.2	0.9		Basin Plan/ EPA Criteria

<sup>1</sup> The pH shall not be less than 6.5 or greater than 8.3.

<sup>2</sup> Effluent limitation effective 18 May 2010.

<sup>3</sup> Effluent limitation effective 31 July 2013.

- b. Survival of aquatic organisms in 96-hour bioassays of undiluted waste from Discharge 001 shall be no less than the following:

Minimum for any one bioassay:----- 70%

Minimum median for any three consecutive bioassays: ----- 90%

## E. Interim Effluent Limitations

1. **Zinc and Ammonia.** The SIP, section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Water Board shall establish interim requirements and dates for their achievement in the NPDES permit. The interim limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent. The State Water Board has held that the SIP may be used as guidance for non-CTR constituents. Therefore, the SIP requirement for interim effluent limitations has been applied to both CTR and non-CTR constituents in this Order.

The interim limitations for zinc and ammonia in this Order are based on the current WWTF performance. In developing the interim limitation, where there are ten sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data.

When there are less than ten sampling data points available, the *Technical Support Document for Water Quality- Based Toxics Control* ((EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current WWTF performance level. Therefore, when there are less than ten sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed effluent concentration to obtain the daily maximum interim limitation (TSD, Table 5-2).

The Regional Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the effluent limitation can be achieved.

Table 6 summarizes the calculations of the interim effluent limitations for zinc and ammonia:

**Table F-8. Interim Effluent Limitation Calculation Summary**

Parameter	MEC	# of Samples	Interim Limitation
Zinc	130 ug/L	4	404 ug/L
Ammonia	14.6 mg/L	7	45 mg/L

## F. Land Discharge Specifications

The following presents a summary of final discharge specifications included in this Order. In general, discharge specifications are based on water qualities objectives contained in the Basin Plan:

**Table F-9. Discharge Specifications – Discharge 002**

Parameter	Units	Effluent Limitations			Basis
		Daily Maximum	Monthly Average	Annual Average	
Flow	mgd	3.1	1.3--	--	BPJ
Electrical Conductivity at 25°C	umhos/cm	--	--	500 plus source or 1,000, whichever is less	Basin Plan
Chloride	mg/L	--	--	175	Basin Plan
Boron, Total Recoverable	mg/L	--	--	1.0	Basin Plan
pH <sup>1</sup>	standard	--	--	--	40 CFR

<sup>1</sup> The pH shall not be less than 6.0 or greater than 9.0

## G. Reclamation Specifications – Not Applicable

## H. Satisfaction of Antidegradation Policy

Provisions of 40 CFR 131.12 and State Water Board Resolution 68-16 prohibit degradation of water quality unless it has been shown that:

1. The degradation is consistent with the maximum benefit to the people of the State;
2. The degradation will not unreasonably affect present and anticipated future beneficial uses;
3. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives; and

4. The discharger employs BPTC to minimize degradation.

Order No. 94-295 authorized the CDI discharges consistent with 40 CFR 131.12 and Resolution 68-16. CDI has requested an increase in discharge flow to groundwater. BOD is commonly used as an indicator of the organic content of a wastewater. EC is an indicator of salinity parameters including, but not limited to, TDS, chloride, and sodium.

### **Treatment**

CDI has completed the following measures to reduce the EC of its wastewater:

1. Installation of a caustic recovery system that enables it to recycle caustic materials used in its CIP processes.
2. Replacement of caustic NaOH with KOH to replace much of the sodium in its discharge with potassium, which is less mobile in the environment and an essential plant nutrient.

CDI employs a lined, aerated pond system to reduce the BOD/TSS concentrations of its effluent and a MVR evaporator to remove salinity from its effluent. To accommodate its expansion, CDI proposes the following modifications to its WWTF:

1. Installation of additional salinity removal treatment technology (RO or more likely an additional MVR evaporator) to reduce the salinity of its high strength waste streams.
2. Division of and conversion of storage Pond 2 to three aerated treatment ponds to increase the WWTF capacity to reduce the BOD/TSS effluent concentrations to 40 mg/L. One of the three may be used for biosolids (pond solids) digestion and storage.
3. Lining of the resulting Pond 2 treatment ponds to preclude the percolation of higher salinity waste waters to groundwater.
4. Installation of pumps to return treated effluent to Ponds A and B for possible denitrification.
5. Adjusting or adding to aeration and mixing capacity.
6. Completion of piping and plumbing improvements to Ponds A and B to improve flow distribution and capacity.
7. Combination of its treated higher salinity waste streams with its lower salinity waste streams such that the discharge from lined treatment ponds to storage will have a projected EC of approximately 650 umhos/cm.

The proposed Order/CDO will require the following:

1. CDI to demonstrate through the submittal of technical reports that the proposed treatment pond liners will be protective of groundwater quality and effect BPTC.
2. Effluent discharged from the lined treatment ponds to the storage ponds to meet annual average effluent EC, boron, and chloride limitations based on Basin Plan limitations for these constituents.

3. Effluent discharged from the storage ponds to Morrison Ditch to meet BOD/TSS concentration limits consistent with those authorized in Order No. 94-295 and BOD/TSS mass limits consistent with federal Effluent Limitation Guidelines, which represent best conventional pollutant control technology (BCT).
4. Effluent discharged from the storage ponds to Morrison Ditch to meet annual average effluent EC limitations based on the Basin Plan effluent limitations and daily maximum effluent boron and chloride limitations that are more stringent than Basin Plan requirements.
5. CDI to comply with interim groundwater limitations that protect applicable water quality objectives and to conduct a study to provide the technical information necessary to implement final groundwater limitations that protect beneficial uses and effect BPTC.
6. CDI to restrict the discharge flow from storage to Morrison Ditch to 4.32 million gallons per day as a daily maximum and 40 million gallons as a monthly maximum. This is less than currently authorized by Order No. 94-295.

The treatment system proposed by CDI and the resulting discharges authorized by the proposed Order will ensure the implementation of BPTC.

Discharges from the treatment ponds to storage ponds will be consistent with the Basin Plan effluent limits and water quality objectives. The mass of salinity constituents migrating to groundwater may increase, but due to proposed treatment system improvements the concentrations will be the same or less than previously authorized and less than currently in groundwater underlying the storage ponds. Thus, groundwater quality should improve. CDI will be required to comply with interim and final groundwater limitations protective of water quality objectives and all beneficial uses. Any resulting degradation that does occur will be less than water quality objectives and will not cause nuisance or pollution. The increase in discharge flow is necessary to allow economic expansion in the area which is of maximum benefit to the people of the State.

With respect to the discharge from the storage ponds to Morrison Ditch, on a monthly basis, the flow and mass of pollutants discharged will be the same as or less than authorized in Order No. 94-295. Effluent discharged to the ditch will be subjected to BPTC and BCT and will not cause violations of water quality objectives or adversely affect beneficial uses.

The discharge as conditioned in this Order is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16.

## **V. RATIONALE FOR RECEIVING WATER LIMITATIONS**

The Basin Plan includes water quality objectives to protect the beneficial uses of surface water and groundwater. The following Receiving Water Limitations are based on these Water Quality Objectives.



## **A. Surface Water**

This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, pH, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity. The discharge does not contain pesticides or radioactive pollutants so receiving water limitations for these constituents are not included in the Order.

## **B. Groundwater**

1. The beneficial uses of the underlying groundwater are MUN, AGR, PRO, IND, and WILD.
2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater.
3. Groundwater monitoring wells were installed in 2006 to evaluate underlying groundwater conditions below the unlined ponds. Sampling results indicate the discharge to unlined storage ponds has degraded the quality of underlying groundwater; however, the degraded groundwater appears to meet State Primary MCLs. The groundwater EC exceeds the most stringent agricultural objective of 700 umhos/cm, but there is not enough information to determine if the degraded groundwater has the potential to adversely impact local agricultural uses. This Order requires the Discharger to conduct studies to provide information necessary to determine appropriate final groundwater limitations and interim groundwater limits are included in this Order to protect beneficial uses of the underlying groundwater prior to completion of the studies.

## **VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS**

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC Sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

### **A. Influent Monitoring – Not Applicable**

### **B. Effluent Monitoring**

1. Pursuant to the requirements of 40 CFR 122.44(i)(2), effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, the effectiveness of the treatment process, and the impacts of the discharge on the receiving stream.

2. Section 1.3 of the SIP requires the Regional Water Board to require periodic monitoring for priority pollutants, at least once prior to the reissuance of a permit, for which criteria or objectives apply and for which no effluent limitations have been established. To comply with the SIP and to adequately characterize the discharge, this Order requires the Discharger to sample its effluent for priority pollutants following permit adoption.

### **C. Whole Effluent Toxicity Testing Requirements**

1. **Acute Toxicity.** Annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

### **D. Receiving Water Monitoring**

#### **1. Surface Water**

Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

#### **2. Groundwater**

Groundwater monitoring is necessary to assess compliance with the interim groundwater limitations and to assess the impacts of the discharge on the underlying groundwater.

### **E. Other Monitoring Requirements - Not Applicable**

## **VII. RATIONALE FOR PROVISIONS**

### **A. Standard Provisions**

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42.

40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the

CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC Section 13387(e).

## **B. Special Provisions**

### **1. Reopener Provisions**

This Order requires the Discharger to conduct effluent monitoring for pollutants that may cause or contribute to exceedances of water quality objectives. Reopener provisions are included in this Order to allow for modification or revocation and reissuance, depending on the results of this monitoring. Reopener provisions are also included in this Order to allow for changes in conditions and for new or amended applicable water quality standards, and for introduction of new information.

### **2. Special Studies and Additional Monitoring Requirements**

- a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00.) Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Attachment E of this Order requires annual chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, this provision requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

- b. **Monitoring Trigger.** A numeric toxicity monitoring trigger of  $> 1 \text{ TUc}$  (where  $\text{TUc} = 100/\text{NOEC}$ ) is applied because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.
- c. **Accelerated Monitoring.** The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than two to three months to complete.

The provision requires accelerated monitoring consisting of four chronic toxicity

tests every two weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991* (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only one of five tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

- d. **TRE Guidance.** The Discharger is required to prepare a TRE Work Plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

*Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, (EPA/833B-99/002), August 1999.*

*Generalized Methodology for Conducting Industrial TREs, (EPA/600/2-88/070), April 1989.*

*Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/005F, February 1991.*

*Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA 600/6-91/005F, May 1992*

*Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity, Second Edition, EPA 600/R-92/080, September 1993.*

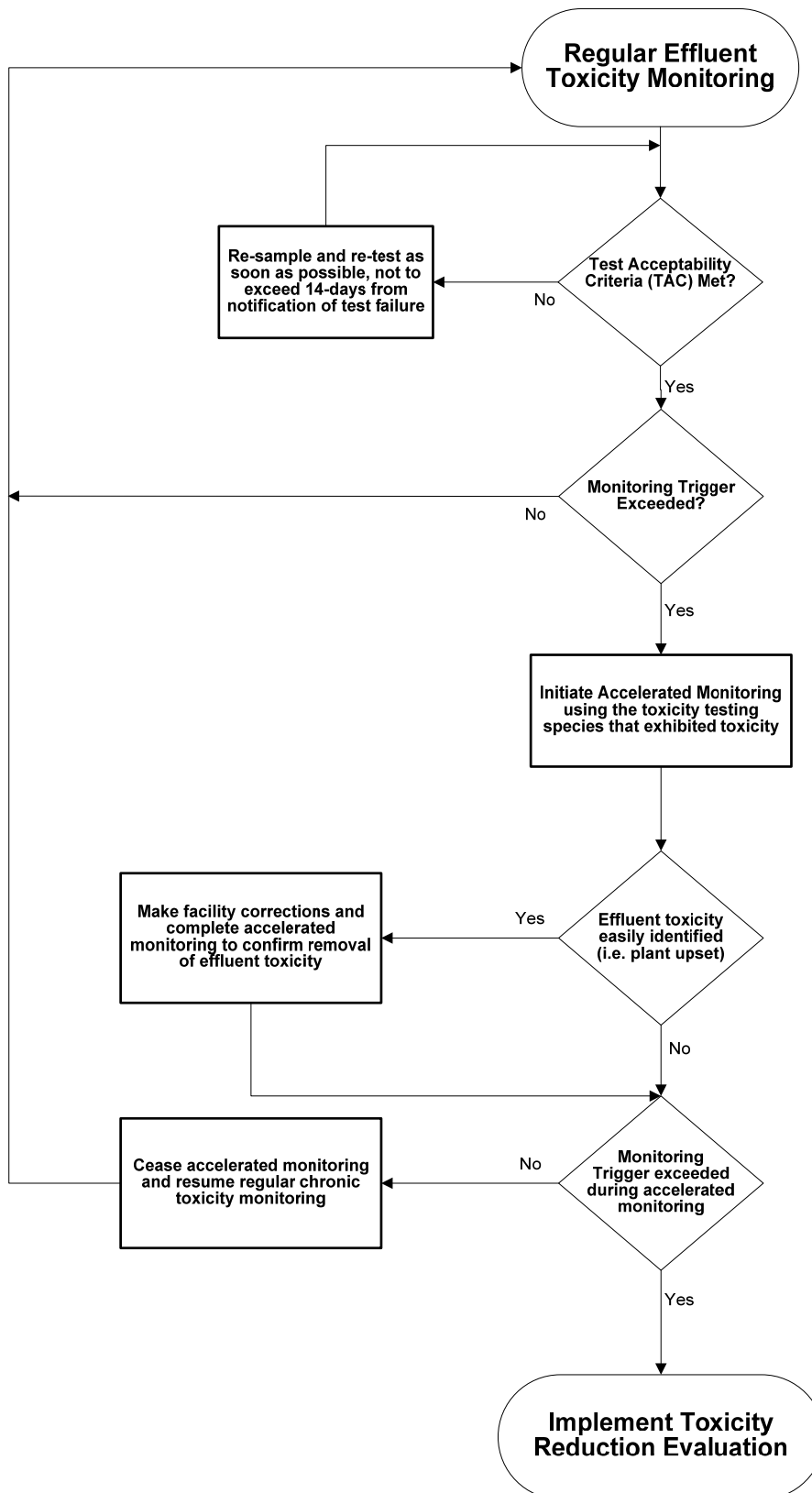
*Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993*

*Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.*

*Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002.*

*Technical Support Document for Water Quality-based Toxics Control, EPA  
505/2-90-001, March 1991.*

**Figure F-1**  
**WET Accelerated Monitoring Flow Chart**



### 3. Best Management Practices and Pollution Prevention

- a. **Pollution Prevention Plans.** The pollution prevention plans required for zinc shall, at minimum, meet the requirements outlined in CWC Section 13263.3(d)(3). The minimum requirements for the pollution prevention plans include the following:
- i. An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent.
  - ii. An analysis of the methods that could be used to prevent the discharge of the pollutants into the Facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the Facility. The analysis also shall identify sources, or potential sources, not within the ability or authority of the Discharger to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible.
  - iii. An estimate of load reductions that may be attained through the methods identified in subparagraph ii.
  - iv. A plan for monitoring the results of the pollution prevention program.
  - v. A description of the tasks, cost, and time required to investigate and implement various elements in the pollution prevention plan.
  - vi. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.
  - vii. A description of the Discharger's existing pollution prevention programs.
  - viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.
  - ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.
- b. **Pollution Minimization Program.** The Discharger is required to conduct a Pollutant Minimization Program for compliance with the SIP when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either a sample result is reported as DNQ and the effluent limitation

is less than the RL, or a sample result is reported as ND and the effluent limitation is less than the MDL.

#### **4. Construction, Operation, and Maintenance Specifications**

- a. The Order contains specifications particular to the use of ponds that are standard practice as to preventing mosquitoes and exceedance of capacity.
- b. The Order contains specifications particular to controlling objectionable odors originating at the Facility.
- c. The Order contains a general requirement for 100-year flood protection.
- d. The Order contains a general requirement that facilities comply with accepted design standards and operate in accordance with an up-to-date Operations and Maintenance Manual.

#### **5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable**

#### **6. Other Special Provisions**

Other special provisions in this Order include specific requirements for change of ownership and requirements for professional reports.

#### **7. Compliance Schedules**

The use and location of compliance schedules in the permit depends on the Discharger's ability to comply and the source of the applied water quality criteria.

This Order establishes a new, final, water quality-based effluent limitation for zinc. The Discharger submitted a request, and justification dated 23 June 2008, for a compliance schedule for zinc. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of Section 2.1 of the SIP. This Order establishes a compliance schedule for the new, final, water quality-based effluent limitation for zinc and requires full compliance by 18 May 2010. As the compliance schedule is greater than one year, this Order requires the Discharger to submit annual progress reports until it achieves compliance with the final limitations.

This Order establishes a new, final, water quality-based effluent limitation for ammonia. A compliance schedule is necessary as the limit is a new limit and the Discharger may need to modify its WWTF or construct appropriate treatment units to provide the required level of treatment. The schedule requires the Discharger to complete the modifications/treatment units as soon as possible, but by no later than 31 July 2013. As the compliance schedule is greater than one year, this Order requires the Discharger to submit annual progress reports until it achieves compliance with the final limitations.



## **VIII. PUBLIC PARTICIPATION**

The Regional Water Board is considering the adoption of an Order (WDRs) that will serve as an NPDES permit for the Discharger. As a step in the Order adoption process, Regional Water Board staff developed a tentative Order. The Regional Water Board encourages public participation in the Order adoption process.

### **A. Notification of Interested Parties**

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through mailing to interested parties on 21 May 2008, posting on the Regional Water Board website, and posting by the Discharger at the site, the local post office, and county courthouse on or before 23 May 2008.

### **B. Written Comments**

The staff determinations are tentative. Interested persons are invited to submit written comments concerning the tentative Order. Comments must be submitted either in person or by mail to the Executive Officer at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by noon on 23 June 2008.

### **C. Public Hearing**

The Regional Water Board will hold a public hearing on the tentative Order during its regular Board meeting on the following date and time and at the following location:

Date: 31 July/1August 2008  
Time: 8:30 am  
Location: Regional Water Quality Control Board, Central Valley Region  
11020 Sun Center Dr., Suite #200  
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, Order, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/rwqcb5/> where you can access the current agenda for changes in dates and locations.

#### **D. Waste Discharge Requirements Petitions**

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final Order. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board  
Office of Chief Counsel  
P.O. Box 100, 1001 I Street  
Sacramento, CA 95812-0100

#### **E. Information and Copying**

The RWD, related documents, tentative limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (559) 445-5116.

#### **F. Register of Interested Persons**

Any person interested in being placed on the mailing list for information regarding the Order and NPDES permit should contact the Regional Water Board, reference this Facility, and provide a name, address, and phone number.

#### **G. Additional Information**

Requests for additional information or questions regarding this Order should be directed to Dale Harvey at (559) 445-6190.

## ATTACHMENT G – REASONABLE POTENTIAL ANALYSIS SUMMARY

	<b>Min Effluent Hardness (mg/L)</b>	21
	<b>Min RW Hardness (mg/L)</b>	10
	<b>Min Eff pH (s.u.)</b>	7.3
	<b>Max Eff pH (s.u.)</b>	9.6

CTR #	Parameter	Units	n	MEC	WQO	Source	RP
2	Arsenic	ug/L	4	2200	<b>10</b>	USEPA Primary MCL	N <sup>1</sup>
					50	California Primary MCL	
					100	Water Quality for Agriculture	
					150	CTR CCC	
8	Mercury	ug/L	4	<b>0.00038</b>	<b>0.05</b>	CTR Human Health Protection	N
13	Zinc	ug/L	4	130	32	CTR CCC/CMC	Y
					2000	Water Quality for Agriculture	
					2100	USEPA IRIS	
					5000	California Secondary MCL	
16	2,3,7,8-TCDD (Dioxin)	ug/L	4	ND	<b>0.000000013</b>	CTR Human Health Protection	N <sup>2</sup>
68	Bis(2-Ethylhexyl)Phthalate	ug/L	4	5.3	<b>1.8</b>	NTR Human Health Protection, consumption of water and aquatic organisms	N <sup>3</sup>
					5.9	NTR Human Health Protection, consumption of aquatic organisms	
					4	California Primary MCL	
					6	USEPA Primary MCL	
					340	CTR CMC	
	Ammonia	mg/L	11	10 <sup>4</sup>	<b>0.93</b>	USEPA Nat. Recommended Criteria CCC	Y
					3.71	USEPA Nat. Recommended Criteria CMC	

<sup>1</sup> MEC is outlier.

<sup>2</sup> Laboratory detection limits greater than CTR criterion, data insufficient to determine RP.

<sup>3</sup> Not enough information to determine RP, no source at CDI. More sampling required.

<sup>4</sup> Pond 3 and Pond 4 data.